

DOCUMENT RESUME

ED 328 274

IR 053 433

TITLE Information Resources Management. A Bibliography with Indexes, 1984-1989. A Selection of Annotated References to Reports and Journal Articles Entered into the NASA Scientific and Technical Information System from 1984 through 1989.

INSTITUTION National Aeronautics and Space Administration, Washington, DC. Scientific and Technical Information Branch.

REPORT NO NASA-SP-7079

PUB DATE May 90

NOTE 204p.; Indexes have very small type.

PUB TYPE Reference Materials - Bibliographies (131)

EDRS PRICE MF01/PC09 Plus Postage.

DESCRIPTORS Annotated Bibliographies; Artificial Intelligence; Expert Systems; *Information Management; Information Networks; Intellectual Property; Library Automation; Management Information Systems; Man Machine Systems; *Scientific and Technical Information; Telecommunications

IDENTIFIERS Computer Security

ABSTRACT

This information resources management (IRM) bibliography provides abstracts of reports and journal articles entered in the National Aeronautics and Space Administration (NASA) scientific and technical information system over a 6-year period. These abstracts are presented in 10 areas: (1) IRM activities and planning; (2) computers, telecommunications, and networks; (3) artificial intelligence, expert systems, and knowledge systems; (4) the human interface; (5) decision support; (6) applications to special areas; (7) management information systems; (8) scientific and technical information and libraries; (9) systems security; and (10) intellectual property. Seven separate indexes provide access to these abstracts by subject, personal author, corporate source, contract number, report number, and accession number. National Technical Information Service (NTIS) order numbers are provided for the items cited and a current NTIS price schedule (effective January 1, 1990) lists North American and foreign prices for standard and exception price documents and microfiche. (MAB)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *

This bibliography was prepared by the NASA Scientific and Technical Information Facility operated for the National Aeronautics and Space Administration by RMS Associates.

INFORMATION RESOURCES MANAGEMENT

**A BIBLIOGRAPHY
WITH INDEXES
1984-1989**

A selection of annotated references to reports and journal articles entered into the NASA scientific and technical information system from 1984 through 1989.

BEST COPY AVAILABLE



National Aeronautics and Space Administration
Office of Management
Scientific and Technical Information Division
Washington DC

1990

This supplement is available from the National Technical Information Service (NTIS), Springfield, Virginia 22161, price code A10.

FOREWORD

The concept and initiation of information resources management (IRM) has been one of the most important events in the information technology arena since the introduction of the computer. In its simplest form, IRM is the management of information and the associated technology and people in a manner consistent with the successful performance of agency missions and programs. The Paperwork Reduction Act of 1980 established the Federal IRM program and led to its initiation in Federal agencies.

NASA has a major role in implementing IRM, especially in the scientific and technical areas. NASA missions are information-intensive efforts, designed to gather data which can be reduced to information to yield knowledge. These missions must be planned with an end-to-end life cycle concern for the collection, transmission, storage, and retrieval of information. The IRM principles of information asset management and life cycle management are becoming a major part of NASA planning in the scientific, engineering, and administrative data processing areas.

As with any management concept or tool, IRM must be integrated into an organization's structure and management approach. NASA is structured and managed in a decentralized manner, with the programs and centers providing strong operational leadership for their assigned activities. Thus, within an overall framework of IRM principles established by NASA Headquarters, the NASA programs and centers implement IRM constructs appropriate to their needs and requirements. Because of the various programs, missions, and structures within NASA, there is a need for information on how to incorporate IRM principles into a number of different environments.

One of the key IRM tenets is the reuse of resources whenever appropriate. Recent documentation on IRM constitutes a valuable resource showing what others have thought, tried, and learned. We offer this IRM bibliography in the hope that you will find it stimulating and useful.

C. Howard Robins, Jr., *Associate Administrator,*
Office of Management

TABLE OF CONTENTS

Abstract Section

IRM Activities and Planning	1
Computers, Telecommunications, and Networks	18
AI, Expert Systems, and Knowledge Systems	32
The Human Interface	46
Decision Support	57
Applications To Special Areas	62
Management Information Systems	80
STI and Libraries	90
Systems Security	104
Intellectual Property	112

Indexes

Subject Index	A-1
Personal Author Index	B-1
Corporate Source Index	C-1
Contract Number Index	D-1
Report Number Index	E-1
Accession Number Index	F-1

TYPICAL REPORT CITATION AND ABSTRACT

NASA SPONSORED
ON MICROFICHE
CORPORATE SOURCE

ACCESSION NUMBER → N89-15435*# Lockheed Missiles and Space Co., Palo Alto, CA
Research and Development Div

TITLE → THE COMPUTATIONAL STRUCTURAL MECHANICS TESTBED
ARCHITECTURE. VOLUME 2: THE INTERFACE

AUTHOR → CARLOS A. FELIPPA Dec. 1988 212 p

CONTRACT NUMBER → (Contract NAS1-18444)

REPORT NUMBERS → (NASA-CR-178386; NAS 1.26.178386, LMSC/D878511-VOL-2)

AVAILABILITY SOURCE → Avail. NTIS HC A10/MF A02 CSCL 20/11

PUBLICATION DATE
COSATI CODE

This is the third set of five volumes which describe the software architecture for the Computational Structural Mechanics Testbed. Derived from NICE, an integrated software system developed at Lockheed Palo Alto Research Laboratory, the architecture is composed of the command language CLAMP, the command language interpreter CLIP, and the data manager GAL. Volumes 1, 2, and 3 (NASA CR's 178384, 178385, and 178386, respectively) describe CLAMP and CLIP and the CLIP-processor interface. Volumes 4 and 5 (NASA CR's 178387 and 178388, respectively) describe GAL and its low-level I/O. CLAMP, an acronym for Command Language for Applied Mechanics Processors, is designed to control the flow of execution of processors written for NICE. Volume 3 describes the CLIP-Processor interface and related topics. It is intended only for processor developers.

Author

TYPICAL JOURNAL ARTICLE CITATION AND ABSTRACT

ACCESSION NUMBER → A84-45547* National Aeronautics and Space Administration
Langley Research Center, Hampton, VA

TITLE → THE FUNCTION OF REPORT COMPONENTS IN THE
SCREENING AND READING OF TECHNICAL REPORTS

AUTHORS → T E PINELLI, V M CORDLE (NASA, Langley Research Center, Hampton, VA), and R F VONDRAN (Catholic University of America, Washington, DC) Journal of Technical Writing and Communication (ISSN 0047-2816), vol 14, no 2, 1984, p. 87-94. refs

AUTHORS' AFFILIATION
JOURNAL TITLE
PUBLICATION DATE

Copyright

A reader preference survey of engineers and scientists at the NASA Langley Research Center and in three professional/technical societies was conducted to determine the opinions of report users and producers concerning the format (organization) of NASA technical reports and the usage of technical report components. The survey questionnaire contained fourteen questions covering twelve survey topics. This article reports the findings of two survey topics: the components initially reviewed or read to determine whether to read a report in its entirety and the order in which report components are read.

Author

INFORMATION RESOURCES MANAGEMENT 1984-1989

A Bibliography with Indexes

MAY 1990

IRM ACTIVITIES AND PLANNING

Initiated under the Paperwork Reduction Act of 1980, IRM has focused, formalized, and provided infrastructure for previously scattered and apparently heterogeneous activities. Various approaches evidenced in the examples in this section show a convergence on the theme that IRM can be successfully applied.

A86-21876

EASCON '84; PROCEEDINGS OF THE SEVENTEENTH ANNUAL ELECTRONICS AND AEROSPACE CONFERENCE, WASHINGTON, DC, SEPTEMBER 10-12, 1984

Conference sponsored by IEEE and DOD. New York, Institute of Electrical and Electronics Engineers, 1984, 334 p. For individual items see A86-21877 to A86-21891.

Copyright

U.S. national Command, Control, Communication (CCC) activities are discussed, taking into account the Nationwide Emergency Telecommunications System (NETS), an outlook on national CCC systems, the improvement of the national military command systems, the Air Force communications commands family of technical initiatives for information systems Air Force-wide, a game plan for the new joint tactical CCC agency, and strategic communications using ELF. Other subjects explored are related to distributed CCCI, NATO CCCI, civilian/government information systems, DOD terrestrial communications networks, DOD communication technology, emerging telecommunications policy issues, national security/emergency preparedness telecommunications, advanced high frequency communications, government and commercial space communications, and the Space Station. Attention is also given to advanced concepts in space communications, technology and policy aspects of commercial satellite communications, commercial space applications, information systems, technology transfer, and space systems. G R

A86-34194

GUIDANCE, NAVIGATION, AND CONTROL FOR 21ST CENTURY AIRCRAFT

J. H. BRAHNEY Aerospace Engineering (ISSN 0736-2536), vol 6, April 1986, p. 18-24

Copyright

Developments such as optical fault-tolerant buses, full digital fly-by-wire control, and active flutter suppression for military aircraft with stores, will make possible ultra fault-tolerant, reliable, high-integrity flight control systems and avionics architectures for the next generation civil and military aircraft. Multiple-redundant automatic flight control systems (AFCS) will enable maximum airframe and engine element performance by relaxing many traditional stability and control constraints. Local flow or vortex control over all lifting surfaces and parts of the fuselage, and integration of highly interactive subsystems like vectored thrust, will improve cruise performance, short field capability, and maneuverability. Other innovations foreseen include automated situational information management systems, the application of artificial intelligence, and local pressure, vibration, surface conditions, and deflection measurement sensors. R R.

A87-11807#

FANS - A U.S. PERSPECTIVE

S. B. PORITZKY (FAA, Washington, DC) IN: Radio Technical Commission for Aeronautics, Annual Assembly Meeting and Technical Symposium, Washington, DC, November 19-21, 1985, Proceedings. Washington, DC, Radio Technical Commission for Aeronautics, 1985, p. 133-144.

The ICAO Future Air Navigation System (FANS) Committee was established to identify potential systems and techniques for improving communications, navigation and surveillance systems and to lay the groundwork for international standardization of the systems. Acceptance of a new system hinges on the perceived need and the willingness (and ability) to pay for it. The latter factor has been a constraining force in numerous developing areas of the world. Studies of the benefits of satellite-based navigation systems led to the identification of several areas in which international civil aviation can benefit from satellites: better position and altitude resolution in the 290-1000 ft altitude interval, improved data link communications, and improved performance standards and an airborne separation assurance capability. The logistics which would have to be implemented to realize these goals with an internationally accepted standard satellite navigation system are discussed. M.S.K.

A87-16003#

THE CONSULTATIVE COMMITTEE FOR SPACE DATA SYSTEMS (CCSDS) PLANNED AND POTENTIAL USE OF THE RECOMMENDATIONS

H. KUMMER (ESA, European Space Operations Centre, Darmstadt, West Germany) IAF, International Astronautical Congress, 37th, Innsbruck, Austria, Oct. 4-11, 1986. 8 p. refs (IAF PAPER 86-303)

The CCSDS has, with the participation of most of the world's major space agencies, established a number of important recommendations for space data system standards. The activities cover: (1) radiometric, i.e., tracking and flight dynamics data, (2) standard format data units for data transfer, archiving and retrieval and (3) data structures and operation procedures for telemetry, command, timing and radio frequency systems. The paper covers the progress of work in this last group of topics and in particular, the acceptance and application of the recommendations in the planning of the infrastructure and projects of the CCSDS participating agencies. One outstanding example in this context is the U.S. Space Station with Canadian, European and Japanese participation, all four also supporting CCSDS activities. Author

A87-31113#

ISSUES AND THEMES IN INFORMATION SCIENCE AND TECHNOLOGY

SAUL AMAREL (DARPA, Information Science and Technology Office, Arlington, VA) AIAA, NASA, and USAF, Symposium on Automation, Robotics and Advanced Computing for the National Space Program, 2nd, Arlington, VA, Mar. 9-11, 1987. 3 p. (AIAA PAPER 87-1661) Copyright

The VLSIC and networking technologies and the goals of current research by DARPA are discussed. Multiprocessor architectures have been devised which are potentially useful for vision, speech, complex symbolic processing and large scientific problems, provided appropriate computational paradigms are developed which exploit the parallel processing architectures. AI development efforts

IRM ACTIVITIES AND PLANNING

are being directed at producing systems which can solve real-life problems, with basic research still being performed on representation, reasoning, learning and discovery, and on frameworks for designing and implementing AI systems, particularly software development systems. Efforts are being expended to expand the ARPANET computer network to enhance collaborative research and engineering productivity. The CAD techniques developed to define the VLSICs have industrial applications for mechanical parts and processes. Advanced robotic projects include work on an autonomous land rover. Finally, expanded R&D on teaching and training systems and on adaptive man-machine interfaces are recommended. M.S.K.

A87-48590#

DATA MANAGEMENT STANDARDS FOR SPACE INFORMATION SYSTEMS

R. DES JARDINS (Computer Technology Associates, Inc., McLean, VA) and C. MAZZA (ESA, European Space Operations Centre, Darmstadt, West Germany) AIAA and NASA, International Symposium on Space Information Systems in the Space Station Era, Washington, DC, June 22, 23, 1987. 7 p. (AIAA PAPER 87-2205) Copyright

Data management - that is, storing, describing and retrieving data - is a special problem for the high performance bit-efficient information systems required for space missions. This paper presents a summary description of data management for space information systems, and describes four specific problem areas that can benefit from data management standards in the Space Station era: data description, data capture, data interchange, and data interpretation. In each area, a recommended modern data management standard or related technique is described as an example recommendation for future space information systems. The paper concludes with a recommendation that space agencies develop testbed validations of these 'new' approaches to data management. Author

A87-53087

FUTURE INFORMATION TECHNOLOGY - THE BIG PICTURE

EDITH W. MARTIN (Boeing Electronics Co., Seattle, WA) IN: The human quest in space; Proceedings of the Twenty-fourth Goddard Memorial Symposium, Greenbelt, MD, Mar. 20, 21, 1986 San Diego, CA, Univelt, Inc., 1987, p. 145-153, Discussion, p. 154, 155.

(AAS PAPER 86 111) Copyright

Future trends in the computer industry are considered. The social and economic changes related to the use of computers are discussed. The advances in component and architecture technology for computer hardware and software are described. It is suggested that there is a need for improvements in computer software, in particular for software capable of system integration. I.F.

A88-104C2

CHARACTERISTICS OF R&D MANAGEMENT WHICH INFLUENCE INFORMATION NEEDS

ROBERT G. BATSON (Alabama, University, Tuscaloosa) IEEE Transactions on Engineering Management (ISSN 0018-9391), vol. EM-34, Aug. 1987, p. 178-183 refs

Copyright

The information needs of mid and upper-level R&D managers are identified by reviewing their environment, functions, and communication patterns from an information systems perspective. The information problems in R&D, such as inability to respond rapidly and failure of analytical support methods, are seen as symptoms of the mismatch of information needs and the information systems employed. The new technology of decision support systems is discussed as the ideal solution approach to R&D information management and decision-making. A comprehensive list of candidate data bases is provided. Author

A88-52359

INFORMATION SYSTEMS FOR SHUTTLE PROCESSING - AN ENTERPRISE APPROACH

MARK W. EDSON and JAMES E. SHOWALTER IN: Space Congress, 25th, Cocoa Beach, FL, Apr. 26-29, 1988, Proceedings, Cape Canaveral, FL, Canaveral Council of Technical Societies, 1988, p. 9-95 to 9-106.

Copyright

The purpose of this paper is to describe a process being utilized by Lockheed Space Operations Company (LSOC) for planning, developing and supporting an integrated information system for the Shuttle Processing Contract (SPC). This process was developed by Electronic Data Systems (EDS) to address the complex modernization and integration issues facing General Motors (GM). LSOC has contracted EDS to participate in adapting the process to the environment at Kennedy Space Center (KSC) for shuttle processing. Author

A89-12104*#

National Aeronautics and Space Administration, Washington, DC.

MAINTAINING OUTER SPACE FOR PEACEFUL PURPOSES THROUGH INTERNATIONAL COOPERATION

GEORGE E. REESE, DAVID J. THACHER (NASA, Washington, DC), and HELEN S. KUPPERMAN IN: Colloquium on the Law of Outer Space, 30th, Brighton, England, Oct. 10-17, 1987, Proceedings, Washington, DC, American Institute of Aeronautics and Astronautics, 1988, p. 52-55. refs

Copyright

NASA activities in support of international cooperation in space exploration and exploitation are briefly reviewed, with a focus on their compatibility with UN treaties. Particular attention is given to the provisions of the National Aeronautics and Space Act of 1958 and other applicable legislation, the over 1000 bilateral and international agreements NASA has entered into since 1958, international participation in currently ongoing NASA projects (Hubble Space Telescope, Galileo, Ulysses, Rosat, the D-2 Spacelab mission), and plans for the International Space Station. T.K.

A89-12107#

MAN-MADE SPACE DEBRIS - DATA NEEDED FOR RATIONAL DECISION

STEPHEN GOROVE (Mississippi, University, University, International Institute of Space Law, Paris, France) IN: Colloquium on the Law of Outer Space, 30th, Brighton, England, Oct. 10-17, 1987, Proceedings, Washington, DC, American Institute of Aeronautics and Astronautics, 1988, p. 135-137. refs

Copyright

This article starts with an emphasis on the growing risks arising from man-made space debris. It calls for a comprehensive study and review of essential data required for informed decision. The data relates not only to the various types of debris but also to the damage that each category of debris may cause and the likelihood of the latter's occurrence. The study and continuous assessment of the debris situation may be undertaken by an appropriate body of scientists, engineers and other professionals under UN auspices. Author

A89-17630*#

Jet Propulsion Lab., California Inst of Tech., Pasadena.

TELESCIENCE, AN OPERATIONAL APPROACH TO SCIENCE INVESTIGATION

JAMES R. WEISS (California Institute of Technology, Jet Propulsion Laboratory, Pasadena) IAF, International Astronautical Congress, 39th, Bangalore, India, Oct. 8-15, 1988. 11 p. (IAF PAPER 88-011)

The NASA Science and Applications Information System, which is based on telepresence and must provide remote interaction between information system services in space and on the ground, is discussed. An infrastructure of networked facilities and institutionally provided support services is being developed. The technologies involved with providing telepresence capability are examined, including automated data management services, new data acquisition systems, user support environment for system access, and the capability to access heterogeneous data bases and computational facilities from remote locations. R.B.

A89-18148#

COMMON SENSE AND PRACTICAL EXPERIENCE PRIOR TO 2167

JAMES E POAG IN, AIAA/IEEE Digital Avionics Systems Conference, 8th, San Jose, CA, Oct 17-20, 1988. Technical Papers Part 2. Washington, DC, American Institute of Aeronautics and Astronautics, 1988, p 654-658 refs (AIAA PAPER 88-3990) Copyright

The DoD-STD-2167 is rapidly becoming the standard of software development for defense contracts. In this paper, company business practices affected by DoD-STD-2167 are considered. The resulting need for external expertise and fiscal constraints and doubts are examined. Problems with internal politics and proposal management problems due to DoD-STD 2167 are addressed.

C D

A89-27210* California Univ., Berkeley.

ASTRONOMICAL DATA ANALYSIS FROM REMOTE SITES

SUPRIYA CHAKRABARTI, CARL DOBSON, GEORGE KAPLAN, HERMAN MARSHALL, MICHAEL LAMPTON (California, University, Berkeley) et al IN Astronomy from large databases. Scientific objectives and methodological approaches; Proceedings of the Conference, Garching, Federal Republic of Germany, Oct 12-14, 1987. Garching, Federal Republic of Germany, European Southern Observatory, 1988, p 295-303. Research supported by the University Space Research Association. (Contract NAS5-29298, NASW-4234)

Copyright

The development of telescience methodologies for teledesign, teleoperation, and teleanalysis, and the possible verification of these concepts using the Extreme UV Explorer (EUVE) are discussed. The EUVE is a satellite payload scheduled for launch in 1991. The use of the Browse data base system (Star et al, 1987) is reviewed and its suitability for astronomy applications is evaluated. The possibility of adopting the Browse system for EUVE data analysis is considered.

R B

A89-41654

U.S. GOVERNMENT POLICIES AND HYPERSONIC FLIGHT IN THE 21ST CENTURY

THOMAS R GOLDBERG (Radian Corp., Herndon, VA) IEEE Aerospace and Electronic Systems Magazine (ISSN 0885 8985) vol. 4, May 1989, p 26-31 refs Copyright

The author examines the potentially negative impact of the U.S. regulations on the development of advanced materials, components, and systems. High priority is given to modification of US antitrust laws if the U.S. is to have the best possible opportunity to compete with more aggressive economies abroad. Export controls are identified as limiting the availability of data to U.S. firms engaged in developing commercial applications. It is asserted that policies must also be enacted to better protect intellectual property rights.

I E

N84-11989# Committee on Government Operations (US House)

PAPERWORK REDUCTION ACT AMENDMENTS OF 1983

Washington GPO 1983 40 p Presented to the Comm of the Whole House on the State of the Union, 98th Con., 1st Sess., 1983 (H-REPT-98-147, GPO 20-580) Avail US Capitol, House Document Room

A requirement of section 3504 of title 44 of the United States Code requires the OMB Director to appoint a trained and professionally experienced Chief Statistician to be responsible for the statistical policy and coordination functions previously assigned to the Director. In addition to being charged with fulfilling previously mandated responsibilities, the Chief Statistician is also required to integrate the statistical functions with other information resources management functions performed by the Administration of the Office of Information and Regulatory Affairs within the OMB.

A R H

N84-18304*# Grumman Aerospace Corp., Bethpage, NY

SPACE STATION NEEDS, ATTRIBUTES AND ARCHITECTURAL OPTIONS, VOLUME 2, BOOK 3: COST AND PROGRAMMATICS Final Technical Report

20 Apr. 1983 79 p refs

(Contract NASW-3685)

(NASA-CR-173320, NAS 1 26 173320,

SA-SSP-RP008-VOL-2-BK-3) Avail NTIS HC A05/MF A01

CSCL 22/2

The cost and programmatic considerations which integrate mission requirements and architectural options into a cohesive system for exploitation of space opportunities within affordable limits are discussed. The mission requirements, baseline architecture, a top level baseline schedule, and acquisition costs are summarized. The work breakdown structure (WBS) used to structure the program, and the WBS dictionary are included. The costing approach used, including the operation of the primary costing tool, the SPACE cost model are described. The rationale for the choice of cost estimating relationships is given and costs at the module level are shown. Detailed costs at the subsystem level are shown. The baseline schedule and annual funding profiles are provided. Alternate schedules are developed to provide different funding profiles. Alternate funding sources are discussed and foreign and contractor participation is outlined. The results of the benefit analysis are given and the accrued benefits deriving from an implemented space station program are outlined.

A R H

N84-19169# Alpha Omega Group, Inc., Harvard, MA

FUNCTIONAL AND DATABASE ARCHITECTURE DESIGN

26 Sep 1983 18 p

(Contract N00014-83-C-0525)

(AD-A136275) Avail NTIS HC A03/MF A01 CSCL 05/2

Much attention and considerable effort has been focused recently on the collection and storage of descriptions of an organization's data and information resources. Some organizations have been quite successful in this collection and storage effort. A different problem, which is more difficult to deal with, has been to provide an easy, effective mechanism for users to access this information once it is stored. This problem generally reduces to determining the existence of information. The Locator and Classifier for Universe Standardization (LOCUS) is a concept which seeks to provide a tool which will aid the user in determining the existence and location of the information about data (i.e., metadata) which is required to perform some task. It is important to emphasize here that LOCUS is a system which operates on metadata, not data itself.

G R A

N84-21408*# National Aeronautics and Space Administration John F Kennedy Space Center, Cocoa Beach, FL

INTERCENTER PROBLEM REPORTING AND CORRECTIVE ACTION SYSTEM (PRACAS)

G H BROCK and J J PALEY In NASA Kennedy Space Center NASA Admin Data Base Management Systems 1983 p 31-54 Apr 1984 refs Prepared in cooperation with Computer Sciences Corp., Orlando, Fla

Avail NTIS HC A08/MF A01 CSCL 05/2

The Kennedy Space Center is transforming the PRACA bath automatic data processing (ADP) system of today into a fully integrated data base with on-line update and retrieval capabilities. The present manual system of reporting (Datafax, mail, and telephone) to the off-site design and engineering organizations is to be replaced by direct access to the most current information as it accrues at KSC or VAFB. Two major goals of the Intercenter PRACA are to provide a single data depository for both launch sites and to fully integrate the problem data with engineering data as well as other relevant information. The resulting ADP system can provide a closed loop system for problem reporting, corrective action and recurrence control that should serve the engineering community as well as reliability and quality assurance at the launch sites, KSC and VAFB, and at the design centers, JSC and MSC.

A R H

IRM ACTIVITIES AND PLANNING

N84-21429# Office of the Secretary of Defense, Washington, DC. Plans and Resources Div.

WORD PROCESSORS IN AEROSPACE/DEFENSE INFORMATION SERVICES: USE OF DISTRIBUTED INFORMATION SYSTEMS BY THE OFFICE OF THE SECRETARY OF DEFENSE

J. M. POWERS *In* AGARD The Appl. of New Technol to Improve the Delivery of Aerospace and Defence Inform 5 p Dec. 1983

Copyright Avail: NTIS HC A06/MF A01

The utilization of word processing and distributed information systems within the Office of the Secretary of Defense (OSD) are described. The OSD is the principal management staff of the Secretary in the exercise of policy definition, planning, resource management, program evaluation, and fiscal evaluation. Thus, there are in fact certain general management functions that agree common to both OSD and to many civilian industrial organizations. The real common denominator in the management of both military and industrial programs, however, is information - information that is accurate, up-to-date, specific, yet comprehensive - information that is needed to assess and evaluate programs and to make better, more informed decisions. Author

N84-22316*# Missouri Univ., Rolla.

THE DATABASE MANAGEMENT SYSTEM: A TOPIC AND A TOOL

O. R. PLUMMER *In* NASA Langley Research Center IPAD 2 p 229-235 Apr. 1984

Avail: NTIS HC A12/MF A02 CSCL 09/2

Data structures and data base management systems are common tools employed to deal with the administrative information of a university. An understanding of these topics is needed by a much wider audience, ranging from those interested in computer aided design and manufacturing to those using microcomputers. These tools are becoming increasingly valuable to academic programs as they develop comprehensive computer support systems. The wide use of these tools relies upon the relational data model as a foundation. Experience with the use of the IPAD RIM5.0 program is described. EAK

N84-23297# Air Force Systems Command, Wright-Patterson AFB, OH.

MECHANIZED CONTRACT DOCUMENT PREPARATION AND ABSTRACT SYSTEM Final Report

T. L. BONO *In* AF Business Research Management Center Proc. of the Fed. Acquisition Res. Symp with Theme p 18-22 1983

(AD-P002750) Avail: NTIS HC A24/MF A04 CSCL 15/5

We have developed a system that revolutionizes contract document preparation by taking advantage of state-of-the-art technology in combining the functions of word processing (WP) and data processing (DP). This system has been proven effective in reducing document preparation time, in producing a better quality document, and reducing document errors. The system simultaneously captures data to be abstracted and fed into a Management Information System (MIS) ensuring that the contract document and abstracted data in the MIS are identical. Since contract documents are mostly text, the WP capability was most important, yet the abstract of specific information could not be accurately and efficiently captured in WP mode. To streamline the data capture portion of the system for abstracting, DP was needed. Finally, to produce a finished product containing both the text and abstracted data, WP and DP had to be efficiently integrated. Through complex software development, we supplemented the vendor software development, we supplemented the vendor software to build a successful prototype system that is undergoing acceptance testing. The system is still in its infancy, but it has taken great strides in increasing the efficiency of contractual document preparation and abstracting. It to come is distributed processing of edit and validation routines currently being accomplished on the mainframe computer. Author (GRA)

N84-23402# Rome Air Development Center, Griffiss AFB, NY. **BEYOND THE DATA BASE: TECHNOLOGY FOR INFORMATION RESOURCE MANAGEMENT**

P. M. LANGENDORF Dec 1983 43 p

(Contract AF PROJ. 4594)

(AD-A138840; RADC-TR-83-312) Avail: NTIS HC A03/MF A01 CSCL 09/2

This report is about data in our society. It first discusses values, how people feel about using data. It then discusses how man has used the technology that is available as tools in handling data, and how data handling has changed as technology changes. Information resource management is now changing very rapidly as new technology becomes available. The report argues that the complex programs we call data base management systems (DBMS) are an artifact of monolithic computers with hierarchies of secondary storage managed by complex general purpose operating systems. The next step will take the DBMS apart, distributing the data management functions to provide the same capabilities with less constraints. The report concludes with a discussion of theory regarding computer based data management. It covers the intellectual ferment following the introduction of random access secondary storage, the development of CODASYL, and the relational model. It briefly discusses the familiar arguments regarding the need to separate logical data definition from the physical location of data, stressing different representational requirements. The report concludes with the author's view of what is needed to form an adequate foundation for information resource management system development. Author (GRA)

N84-24244# Ultracom, Inc., Del Mar, CA

DEVELOPMENT OF A PROPOSED STANDARD FOR THE EXCHANGE OF SCIENTIFIC MICROCOMPUTER PROGRAMS Summary Report

J. M. FISCELLA Nov. 1983 16 p

(PB84-157940, ULT-2002) Avail: NTIS HC A03/MF A01 CSCL 09/2

The incompatibility problems encountered between different microcomputer and supermicrocomputer systems for the exchange of software are reviewed. It examines the causes of exchange incompatibility for some of the most widely used hardware and operating systems, with the aim of specifying a set of exchange standards. More than one standards set is required because of the diversity of operating systems and mass storage formats. The exchange standard developed include specifications of what types of files are to be included on the mass storage exchange medium, as well as a full description of the mass storage format (including medium, density, operating system, etc.) Three different exchange standard sets are recommended, all utilizing diskettes. Author

N84-24504# Committee on Small Business (U.S. House) **PAPERWORK REDUCTION ACT OF 1980**

Washington GPO 1984 160 p Hearing before the Subcomm on Govt Regulation and Paperwork of the Comm on Small Business, 98th Congr., 1st Sess., 15 Nov. 1983

(S-REPT-98-479, GPO-28-416) Avail: Subcommittee on Government Regulation and Paperwork

How Government paperwork requirements are affecting America's small businesses is examined with emphasis on the effectiveness of the 1980 Paperwork Reduction Act, Public Law 96-511. Some specific recommendations as to how the paperwork burden can be further reduced are advanced. ARH

N84-25528# Committee on Armed Services (U.S. House) **TECHNOLOGY TRANSFER**

Washington GPO 1984 297 p refs Hearings before the Technol Transfer Panel of the Comm on Armed Services, 98th Congr., 1st Sess., 9, 21, 23 Jun., 13-14 Jul. 1983

(H-REPT-93-15, GPO-27-827) Avail: Committee on Armed Services

The problem of unequal technology transfer between the United States and the U.S.S.R. is discussed with particular emphasis on the National Security of the United States and the economic impact of the information flow. Trade control lists such as the Military

Critical Technology List (MCTL) are examined and associated trade control strategies are discussed. Specific industries such as the computer and semiconductor equipment industries are examined. M.A.C.

N84-25742# Range Commanders Council, White Sands Missile Range, NM. Documentation Group.

UNIVERSAL DOCUMENTATION SYSTEM HANDBOOK - AN INTRODUCTION TO THE UNIVERSAL DOCUMENTATION SYSTEM

1984 16 p
(AD-A140140; RCC/DG-501-84) Avail: NTIS HC A03/MF A01 CSCL 05/1

The Range Commanders Council (RCC) Documentation Group has developed a Universal Documentation System (UDS) for the purpose of creating better communications between interacting agencies. The UDS endeavors to standardize the efforts of all agencies who seek support in conducting operations on the various ranges. The following graphic illustrations have been prepared for the purpose of familiarizing potential range users with the UDS, which has been published as RCC Document 401. An overview of the system, including descriptions of the various levels of documentation, system flexibility/options and general user guidelines has been included. The UDS is a comprehensive tool which can be used by all. Author (GRA)

N84-29437# Arizona Univ., Tucson. Coll of Business and Public Administration.

INFORMATION SEARCH IN JUDGMENT TASKS: THE EFFECTS OF UNEQUAL CUE VALIDITY AND COST Interim Technical Report

T. CONNOLLY and P. SERRE May 1984 31 p
(Contract N00014-83-K-0742)
(AD-A141712; ONR-84-1) Avail: NTIS HC A03/MF A01 CSCL 05/1

The broad question addressed by this research is: How good are humans at balancing the costs and benefits of their information acquisition? Do they buy those, and only those, sources of information whose acquisition cost is outweighed by the improvement in decision quality that their use makes possible? The evidence reported here, together with that reviewed earlier, suggests that the answer is not encouraging. Specifically, the present findings extend those noted earlier in suggesting: (1) That the pattern of overpurchase for low-consequence decisions, and underpurchase for high-consequence decisions, is robust to variation in overall cue validity, as well as to procedural modifications such as manual versus computer-interactive transactions (Experiment 1), (2) That overpurchase is frequently coupled with mispurchase (Experiments 2 & 3). That is, subjects, in addition to buying overall more information than was normatively justified, frequently bought expensive cues when cheap, equally-valid ones were available (Experiment 2), or low-validity cues when higher-validity, equally-costly cues were available (Experiment 3), (3) That subjects perceive equally-valid cues as of differential validity (Experiments 1 & 2), and are able to detect real validity differences between cues reliably only when the differences are large (Experiment 3). Purchase behavior is generally shaped by these perceptions of validity, whether well-founded or not, though the relationship disappears when equally-valid cues are offered at different costs (Experiment 2). GRA

N84-31060# National Telecommunications and Information Administration, Washington, DC.

POLICY IMPLICATIONS OF INFORMATION TECHNOLOGY

R. K. SALAMAN and E. C. HETTINGER Feb. 1984 50 p refs
(PB84-183219; NTIA-84-144) Avail: NTIS HC A03/MF A01 CSCL 05/2

Three-quarters of the U.S. employment and one-half of the Gross National Product (GNP) are associated with services. In 1981, services employment predominated, for the first time, over both agriculture and manufacturing, even in the Third World countries. The increasing importance of services to the economy and the society has been stimulated by the greater availability of

information and communications products. A project devoted to formulation of national information policy as necessary to accommodate the new opportunities presented by advanced information technologies, and the impact on the economy and society is analyzed. The meaning of information policy is defined, the report and current issues concerning domestic industry, growth, maintaining international leadership, and new considerations regarding intellectual property are discussed. GRA

N84-32282*# Towson State Univ., MD. Dept. of Computer and Information Sciences.

LOGICAL OPTIMIZATION FOR DATABASE UNIFORMIZATION Technical Report, 1 Sep. 1983 - 31 Aug. 1984

J. GRANT 1984 98 p re.s
(Contract NAG5-267)
(NASA-CR-173836; NAS 1.26:173836) Avail: NTIS HC A05/MF A01 CSCL 05/2

Data base uniformization refers to the building of a common user interface facility to support uniform access to any or all of a collection of distributed heterogeneous data bases. Such a system should enable a user, situated anywhere along a set of distributed data bases, to access all of the information in the data bases without having to learn the various data manipulation languages. Furthermore, such a system should leave intact the component data bases, and in particular, their already existing software. A survey of various aspects of the data bases uniformization problem and a proposed solution are presented. Author

N84-33267*# National Aeronautics and Space Administration. Ames Research Center, Moffett Field, CA.

STRATEGIES FOR CONVERTING TO A DBMS ENVIRONMENT D. M. DURBAN In NASA, Washington NASA Admin. Data Base Management Systems, 1984 p 1-10 Sep. 1984

Avail: NTIS HC A07/MF A01 CSCL 05/2
The conversion to data base management systems processing techniques consists of three different strategies - one for each of the major stages in the development process. Each strategy was chosen for its approach in bringing about a smooth evolutionary type transition from one mode of operation to the next. The initial strategy of the indoctrination stage consisted of: (1) providing maximum access to current administrative data as soon as possible; (2) select and developing small prototype systems; (3) establishing a user information center as a central focal point for user training and assistance; and (4) developing a training program for programmers, management and ad hoc users in DBMS application and utilization. Security, the rate of the data dictionary, and data base tuning and capacity planning, and the development of a change of attitude in an automated office are issues meriting consideration. A.R.H.

N84-33268*# National Aeronautics and Space Administration, Washington, DC.

EFFECTIVE ORGANIZATIONAL SOLUTIONS FOR IMPLEMENTATION OF DBMS SOFTWARE PACKAGES

D. JONES In NASA Admin. Data Base Management Systems, 1984 p 11-20 Sep. 1984
Avail: NTIS HC A07/MF A01 CSCL 05/2

The space telescope management information system development effort is a guideline for discussing effective organizational solutions used in implementing DBMS software. Focus is on the importance of strategic planning. The value of constructing an information system architecture to conform to the organization's managerial needs, the need for a senior decision maker, dealing with shifting user requirements, and the establishment of a reliable working relationship with the DBMS vendor are examined. Requirements for a schedule to demonstrate progress against a defined timeline and the importance of continued monitoring for production software control, production data control, and software enhancements are also discussed. A.R.H.

IRM ACTIVITIES AND PLANNING

N84-33271* National Aeronautics and Space Administration
Goddard Space Flight Center, Greenbelt, MD

A USER VIEW OF OFFICE AUTOMATION OR THE INTEGRATED WORKSTATION

E. R. SCHMERLING / In NASA, Washington NASA Admin Data
Base Management Systems, 1984 p 51-54 Sep 1984
Avail. NTIS HC A07/MF A01 CSCL 05/2

Central data bases are useful only if they are kept up to date and easily accessible in an interactive (query) mode rather than in monthly reports that may be out of date and must be searched by hand. The concepts of automatic data capture, data base management and query languages require good communications and readily available work stations to be useful. The minimal necessary work station is a personal computer which can be an important office tool if connected into other office machines and properly integrated into an office system. It has a great deal of flexibility and can often be tailored to suit the tastes, work habits and requirements of the user. Unlike dumb terminals, there is less tendency to saturate a central computer, since its free standing capabilities are available after down loading a selection of data. The PC also permits the sharing of many other facilities, like larger computing power, sophisticated graphics programs, laser printers and communications. It can provide rapid access to common data bases able to provide more up to date information than printed reports. Portable computers can access the same familiar office facilities from anywhere in the world where a telephone connection can be made. A R H

N84-33273* National Aeronautics and Space Administration
Langley Research Center, Hampton, VA

STRIP AND LOAD DATA

R. H. JONES / In NASA, Washington NASA Admin Data Base
Management Systems, 1984 p 57-58 Sep 1984
Avail. NTIS HC A07/MF A01 CSCL 05/2

The method of taking batch data files and loading these files into the ADABAS data base management system (DBMS) is examined. This strip and load process allows the user to quickly become productive. Techniques for data fields and files definition are also included. M A C

N84-33284* RAND Corp., Santa Monica, CA
**INTERACTIVE INFORMATION ENVIRONMENTS: A PLAN FOR
ENABLING INTERDISCIPLINARY RESEARCH**

L. R. TALBERT, T. K. BIKSON, and N. Z. SHAPIRO Apr 1984
76 p refs
(RAND/N-2115) Avail. NTIS HC A05/MF A01

The implementation of information technology in organizational settings is examined. Research plans and problems are discussed along with the preliminary procedures and hypotheses. An organizational structure is also provided. M A C

N84-33288* Air Command and Staff Coll., Maxwell AFB, AL
**IMPLEMENTING AUTOMATED INFORMATION SYSTEMS IN
THE AIR FORCE**

J. P. TOTSCH Apr 1984 34 p
(AD-A143398, ACSC-84-2605) Avail. NTIS HC A03/MF A01
CSCL 09/2

The report purpose is to review and evaluate Air Force guidance on implementing information systems and to provide step-by-step procedures on how to implement such systems. It presents the step-by-step procedures one must follow to initiate, plan, organize, implement, and maintain an automated information system. The project also evaluates Air Force guidance on implementing these systems from a user's perspective and recommends actions to ease the burden on the system implementer. G R A

N84-33296* National Library of Medicine, Bethesda, MD
Technical Services Div

NOTES FOR MEDICAL CATALOGERS, 1983

May 1984 35 p refs
(PB84-195874, NLM-TSD-84-01) Avail. NTIS HC A03/MF A01
CSCL 05/2

The report contains articles and news announcements

describing the cataloging policies, procedures and bibliographic databases of the Cataloging Section of the National Library of Medicine. G R A

N84-34188* Oak Ridge National Lab., TN Computer Sciences.
**USER'S GUIDE FOR AN IBM PL/I IMPLEMENTATION OF THE
INTERNATIONAL STANDARD ORGANIZATION DIS 8211**

INFORMATION PROCESSING-SPECIFICATION FOR A DATA DESCRIPTIVE FILE FOR INFORMATION INTERCHANGE

A. A. BROOKS, F. D. HAMMERLING, and B. N. MCNEELY Oct
1983 59 p refs
(Contract W-7405-ENG-26)
(ORNL/CSD-TM-207) Avail. NTIS HC A04/MF A01

An IBM PL/I implementation of the International Standard Organization DIS 8211 Information Processing - Specification for a Data Descriptive File for Information Interchange is described. This implementation is in the form of user callable, multiple entry PL/I subprograms that perform the functions necessary for the creation of and retrieval from these files. Two typical main procedures are included which make use of the general purpose subroutines. The first is a main procedure which creates the Data Descriptive File and which calls input routines to obtain the required input data. Two of these input routines are described. The second main procedure provides for the retrieval of records and fields from an existing Data Descriptive File and produces output lists of the data and field controls. M A C

N84-34327* Defense Technical Information Center, Alexandria, VA

DTIC 2000: A CORPORATE PLAN FOR THE FUTURE Final Report

R. D. DOUGLAS, E. V. MCCAULEY, A. D. KUHN, J. L. BELL, and
K. W. WOOLRIDGE Jul 1984 115 p Original contains color
illustrations
(AD-A143900, DTIC/TR-84/3) Avail. NTIS HC A06/MF A01
CSCL 05/2

This report documents the corporate level long-range plan for the Defense Technical Information Center (DTIC). The plan describes the societal and DoD environments within which DTIC will most likely operate over the next 15-20 years. It relates these future environments to meaningful long-range goals for DTIC. The particular areas highlighted in the plan are Products and Services, Personnel, and Finance and Budget. Author (GRA)

N85-10859* Naval Postgraduate School, Monterey, CA
**DATA DICTIONARY SYSTEMS AND THEIR ROLE IN
INFORMATION RESOURCE MANAGEMENT M.S. Thesis**

D. L. ROBERTSON Mar. 1984 93 p
(AD-A144905) Avail. NTIS HC A05/MF A01 CSCL 09/2

The explosive proliferation of computers has led to the increasing importance of developing and implementing various management concepts for effective and efficient operation and control. The complex data processing environment of today cannot be handled by hardware alone, but require an information system composed of hardware, software, data, personnel and procedures. The vast storage capabilities of modern equipment had led to the development of databases or more effective and efficient use of memory capacity. The increasing importance of software and the cost of developing and maintaining it demands more and better management, giving rise to the software life cycle concept. With the automation of the functions of an organization, data and information become critical organizational resources. Information Resource Management provides effective and efficient management and control of these information resources. A key component in this management and control is the Data Dictionary System. Author (GRA)

N85-12796* Interior Dept., Washington, DC

IRM (INFORMATION RESOURCES MANAGEMENT)

LONG-RANGE PLAN: FISCAL YEAR 1984-1988 (UPDATE).

**VOLUME 2: ADP AND TELECOMMUNICATIONS ACQUISITION
PLAN**

May 1984 51 p

(PB84-229244) Avail NTIS HC A04/MF A01 CSCL 05/2

The IRM LRP provide guidance for improving management of the Interior Department's information resources. Data processing and telecommunications equipment acquisitions are discussed. The types of technology, services, and facility management are detailed. The budget formulation process is reviewed. E R

N85-12803# International Trade Administration, Washington, DC.

COMPETITIVE ASSESSMENT OF THE US INFORMATION SERVICES INDUSTRY Final Report

May 1984 77 p refs

(PB84-174804) Avail. NTIS HC A05/MF A01 CSCL 05/2

An operational definition of the four principal segments of the information services industry in the United States: database development, on-line information services, document supply services, and customized search and abstracting services are discussed. Major domestic firms are identified along with a discussion of the current state of information services in Europe and Japan. Domestic markets and firms are discussed in terms of their characteristics and trends. Domestic and international competitive issues are identified. Return on investment is calculated for hypothetical data base development and on-line services projects, along with an analysis of the sensitivity of internal rate of return to changes in the most significant factors. Driving forces in the future of the industry are identified. A limited number of international and domestic options for maintaining the competitiveness of the domestic industry are discussed. Author

N85-13673# Brigham Young Univ., Provo, UT Dept of Economics.

ECONOMIC VALUE OF CONSUMER INFORMATION: A SELECTED, ANNOTATED BIBLIOGRAPHY

R. D. POPE Jul 1984 154 p Sponsored by Economic Research Service

(PB84-235795, AGES-840312) Avail NTIS HC A08/MF A01 CSCL 05/2

This annotated bibliography contains references on the economic value of information. The citations are listed under three topic areas: consumer surplus and welfare theory, stabilization and economic welfare, and information and efficiency. With a few exceptions, books and lengthy reports are not annotated. GRA

N85-13674# Los Alamos Scientific Lab., NM

INFORM SYSTEM 2-YEAR PLAN, FY 1984-1985

Jul. 1984 57 p refs

(Contract W-7405-ENG-36)

(DE84-016044, LA-10185-MS) Avail NTIS HC A04/MF A01

An implementation plan for the Information Management (INFORM) System of the Los Alamos National Laboratory for Fiscal Years 1984 and 1985 is described. Subjects discussed include system goals, planning considerations, organization, supporting facilities, projects, critical issues, and customer support. DOE

N85-15434# Argonne National Lab., IL

RECOMMENDED DOCUMENTATION FOR COMPUTER USERS AT ANL

A. DOBYNS and R. RIVETNA Aug 1984 69 p

(Contract W-31-109-ENG-38)

(DE84-016285, ANL/TM-379-REV) Avail NTIS HC A04/MF A01

This is for all current and potential users of the services available from the Argonne National Laboratory computing systems. This manual guides in selecting documentation that will best fill the users' needs. It describes all the documentation available at the Computing Services Division Document Distribution Center. If the documentation needed is not listed in this manual, investigate documentation that other divisions supply. Chapter 1 explains the use of this document. Chapter 2 is a block diagram that identifies the various topics for which documentation is available and identifies their relationships to each other. Chapter 3 contains lists of publications organized by topics. Chapter 4 contains

abstracts of each publication. And Chapter 5 describes additional publications that contain bibliographies and master indexes.

B R

N85-16517# National Bureau of Standards, Washington, DC

DOCUMENT INTERCHANGE FORMAT

J. E. KNOERDEL and S. W. SATKINS Apr 1984 41 p

Sponsored in part by Navy

(PB84-217033, NBSIR-84-2836) Avail NTIS HC A03/MF A01

CSCL 09/2

In the absence of standards, both the private and public sectors have addressed document interchange among different vendors' text processing stems in a number of ways. In an attempt to solve this interchange problem with respect to encoding of control functions for the Department of the Navy, a project was originated by the Office of the Under Secretary of the Navy for Financial Management to determine the formation requirements of the Department of the Navy and to translate those requirements to a representation that would be supported by text processing system providers. The encoded representation of the formatting control functions is known as the Document Interchange Format (DIF). The overall approach taken by the DIF and definitions and implementation details for DIF are described. GRA

N85-17742# Naval Postgraduate School, Monterey, CA

TOWARDS AN IDEAL DATABASE SERVER FOR OFFICE AUTOMATION ENVIRONMENTS

S. A. DEMURJIAN, D. K. HSIAO, D. S. KERR, and P. R. STRAWSER Oct. 1984 28 p

(Contract RR0-1403)

(AD-A148184, NPS52-84-018) Avail NTIS HC A03/MF A01 CSCL 09/2

Office automation systems are growing, both in use and in complexity. The development of a database management system for the office automation environment becomes a high priority, in order to provide an efficient and reliable way to manage the information needs of the office. Therefore, the specification of an ideal database server for the office automation environment becomes a key area of concern. In addition to providing traditional support, the ideal database server must also provide new database support, in order to meet the unique and many needs of office automation environments. In this paper, we focus on the characterization and specification of an ideal database server for the office automation environment. We also consider how such an ideal database server can be effectively integrated into the office automation environment. Further, we examine an experimental database system, known as the multi-backed database system (MBDS), as a candidate for the ideal database server in the office automation environment. Author (GRA)

N85-23449# Naval Postgraduate School, Monterey, CA Dept of Computer Science

GENERAL DESIGN CONSIDERATIONS OF AN AIR FORCE INFORMATION SYSTEM M.S. Thesis

E. AYTACER, JR Jun 1984 118 p

(AD-A150611) Avail NTIS HC A06/MF A01 CSCL 09/4

General design issues of an Air Force information system are considered in this thesis. The current structure of the system is presented with its requirements. Information: storing, retrieving and updating procedures are described. An example of a logical database is designed. Networking issues are expressed in an undetailed way. Finally, a set of high-end minicomputers are evaluated to present the approximate cost of this system. And a general methodology for minicomputer selection process is presented. GRA

N85-27121# Naval Postgraduate School, Monterey, CA

AN ANALYSIS OF DATA DICTIONARIES AND THEIR ROLE IN INFORMATION RESOURCE MANAGEMENT M.S. Thesis

S. L. LANDIN and R. L. OWENS Sep 1984 109 p

(AD-A152134) Avail. NTIS HC A06/MF A01 CSCL 05/2

The goal of efficient management of an organization's information resource can be accomplished through the

IRM ACTIVITIES AND PLANNING

implementation and use of a data dictionary. This thesis defines the structure and functions of a data dictionary and analyzes the attempt of the National Bureau of Standards to promulgate a standard software specification for use in the evaluation and selection of data dictionaries in the federal government. Criteria for the ideal data dictionary are developed based on the role a dictionary can play in information resource management and are then used to evaluate four commercial data dictionary packages. Finally, some ideas concerning possible applications for data dictionary technology are presented. GRA

N85-27127# Senior Interagency Group on International Communication and Information Policy, Washington, DC.
WHITE PAPER ON NEW INTERNATIONAL SATELLITE SYSTEMS

Feb. 1985 70 p
(PB85-162501) Avail: NTIS HC A04/MF A01 CSCL 17/2
Background information regarding the President's determination is reported and provides information on important regulatory and other parallel measures which are desirable to ensure that the Executive branch's fundamental policy goal, an efficient and responsive international communications environment, is achieved. The major communications and information policy issues raised by the applications before the FCC are discussed. Commercial, trade, and legal matters, and also major U.S. foreign policy interests and concerns are addressed. The report, however, consolidated much of the extensive analysis that was undertaken by the Executive branch and sets for the requirements applicable to any system that FCC may eventually authorize. GRA

N85-28633# Oak Ridge Y-12 Plant, TN.
EFFORTS AT OFFICE AUTOMATION AND INFORMATION SYSTEMS UTILIZATION AT MARTIN MARIETTA ENERGY SYSTEMS, INCORPORATED
C. A. REEVES, JR. 1 Mar. 1985 50 p refs Presented at 32nd PSI Ann. Secretarial Inst., Knoxville, Tenn., 6 Mar 1985 (Contract DE-AC05-84CS-21400)
(DE85-008154; Y/DL-914, CONF-8503118-1) Avail: NTIS HC A03/MF A01

A brief history is given of the efforts at utilization of mainframe computers, personal or desktop computers, standalone word processors, and other such devices at Martin Marietta Energy Systems in Oak Ridge, Tennessee. This discussion is concentrated on how these systems have been used in the office, both for purely technical and management oriented applications. Some detail is also given on how these systems have been used to solve some typical problems in offices, so that others might benefit from lessons learned. DOE

N85-28879# Advanced Technology, Inc., Reston, VA
DLA: DATA/DATABASE ADMINISTRATION ANALYSIS Final Report
R. GIROUARD 26 Feb. 1985 134 p
(Contract DLAH00-83-D-0225)
(AD-A153031) Avail: NTIS HC A07/MF A01 CSCL 05/2

The scope of this study addresses the following three questions: What Data/Data Base Administration (D/DBA) functions have to be performed to effectively manage the D/DBA environment in DLA? What tools are needed to support the D/DBA functions? What is the required organizational structure for the functions and tools and where should they be located throughout DLA? The goal of this study is to conduct an extensive review and assessment of existing Data/Data Base Administration methods and procedures to develop concepts, directions, and an organizational approach in accomplishing the management of automated information DLA wide. GRA

N85-30760# Brookhaven National Lab., Upton, NY National Nuclear Data Center.
THE INTERNATIONAL SCOPE OF DATA EVALUATION
S. PEARLSTEIN 1985 8 p refs Presented at the Ann Meeting of the American Nuclear Society, Boston, 9-14 Jun 1985

(Contract DE-AC02-76CH-00016)
(DE85-005952; BNL-NCS-35794; CONF-850610-13) Avail: NTIS HC A02/MF A01

The principal national and international evaluation activities that contributed to the widespread use of evaluated data files are summarized. Those efforts that have become best known through the availability of data, documentation, and computer codes are emphasized. Early attempts at nuclear data evaluation consisted of improving communication among measurers of similar information. As reactor methodology proceeded from a four factor formula to multigroup theory the demand for detailed representation of nuclear data increased. The systematic access to large volumes of data required placing the information in computer readable formats. DOE

N85-31848# National Academy of Sciences - National Research Council, Washington, DC.
EVALUATIVE REPORT ON THE INSTITUTE FOR COMPUTER SCIENCES AND TECHNOLOGY, NATIONAL BUREAU OF STANDARDS, FISCAL YEAR 1984
Dec. 1984 13 p Sponsored by NBS
(PB85-176097) Avail: NTIS HC A03/MF A01 CSCL 09/2

The technical functions and programs of the Institute for Computer Sciences and Technology, one of the major organizational units of the National Bureau of Standards were evaluated. The report deals with only a part of the total NBS effort. GRA

N85-32038# National Academy of Sciences - National Research Council, Washington, DC
NAVY INFORMATION SYSTEMS: PLANNING, POLICY, ORGANIZATION, AND MANAGEMENT Final Report
Jan. 1985 60 p
(Contract N00014-80-C-0160)
(PB85-176113) Avail: NTIS HC A04/MF A01 CSCL 05/2

The committee automatic data processing that reviewed Navy's management and planning of (ADP) systems presents its findings. Committee recommends new thrust that focuses on information rather than transactional ADP systems; change ADP systems into information systems. The following specific recommendations were made: The Navy needs a strong advocate of information systems at Chief of Naval Operations-level (CNO), Create a new CNO division, Information Systems Division, under a flag officer to report to Command and Control. How well the Navy has implemented the committee's recommendations is discussed. GRA

N85-32825# Naval Postgraduate School, Monterey, CA.
THE ARCHITECTURAL REQUIREMENTS AND INTEGRATION ANALYSIS OF A DATABASE SERVER FOR OFFICE AUTOMATION
S. A. DEMURJIAN, D. K. HSIAO, and R. G. MARSHALL May 1985 21 p
(Contract PROJ. RR0-1408)
(AD-A155517, NPS52-85-008) Avail: NTIS HC A03/MF A01 CSCL 09/2

Office automation systems are growing both in use and in complexity. The development of a database management system for the office automation environment becomes a high priority, in order to provide an efficient and reliable way to manage the information needs of the office. Therefore, the specification of a database server for the office automation environment becomes a key area of concern. In addition to providing traditional database support, the database server must also provide new database support, so as to meet the unique and many needs of office automation environments. This paper focuses on the characterization and specification of a database server for the office automation environment. It also considers how such a database server can be effectively integrated into the office automation environment. The authors use both intuitive comparisons and queuing-theory analyses to evaluate the various integration approaches. Further, they examine an experimental database system, known as the multibackend database system,

as a candidate for the database server in the office automation environment. Author (GRA)

N85-33043# Defense Technical Information Center, Alexandria, VA.

THE FLOW OF SCIENTIFIC AND TECHNICAL INFORMATION IN THE US ARMY RESEARCH LABORATORIES Final Report R. L. BIXBY May 1985 52 p (AD-A155050; DTIC/TR-85/4) Avail: NTIS HC A04/MF A01 CSCL 05/2

The Defense Technical Information Center (DTIC) provides information services to the Army, Navy, Air Force, other Department of Defense (DOD) agencies, other Government agencies, and Government contractors. In order to provide this information, DTIC needs to anticipate the information needs of its users. An understanding of the flow of scientific and technical information (STINFO) within DTIC user organizations is necessary to provide the best services. This paper was undertaken to trace the flow of STINFO within the Department of the Army's research laboratories and to determine how the Army researcher gathers information. Recommendations are made as to how DTIC can better serve the information needs of the Army. Author (GRA)

N85-33736# Sandia National Labs., Albuquerque, NM.
INTEGRATION OF OFFICE AUTOMATION WITHIN COMPUTING

1985 19 p Presented at the DOE Conf. on Office Automation, Albuquerque, N. Mex., 24 Apr. 1985 (Contract DE-AC04-76DP-00789) (DE85-010021, SAND-85-0925C, CONF-8504129-1) Avail: NTIS HC A03/MF A01

An informal talk is given that focuses on the coupling between office automation efforts and the traditional fields of computing, particularly management information systems. DOE

N85-35818# Oak Ridge Associated Universities, Inc., TN
ELECTRONIC INFORMATION MANAGEMENT AND PRODUCTIVITY

E. B. SIGMON Apr 1985 40 p (Contract DE-AC05-76OR-00033) (DE85-013362, ORAU/IEA-85-3(M)) Avail: NTIS HC A03/MF A01

Electrification leads to technological advances because its characteristic flexibility and controllability circumvent barriers inherent with other means of delivering energy to processes. Typically, the productivity impacts of electrification occur in two stages: Small gains are realized when the electric technology is directly substituted for the established non-electric technology, larger gains accrue from subsequent reorganization of the production process permitted by the superior flexibility of the electric technology. Electricity's role as an information medium is examined and parallels to its role as an energy medium are found. Electronic information technologies (e.g., robotics and word processing) permit mechanization of complex, low volume tasks formerly too expensive to mechanize. Yet experts expect the greatest gains to come from subsequent linking of individual electronically mechanized tasks into an integrated unit in which information barriers between tasks are largely eliminated. Again, the unique flexibility of electricity leads to technological progress. DOE

N85-35823# Naval Research Lab., Washington, DC.
RECORDS DISPOSAL: A GUIDEBOOK FOR LABORATORY OFFICES

J. A. S. PITTS Apr. 1985 58 p (AD-A156064, AD-E301677) Avail: NTIS HC A04/MF A01 CSCL 05/2

A guidebook for the disposal of U.S. Government laboratory records includes among the types of temporary or permanent records any that have been produced at government expense or on government time. They are to be reviewed periodically by a project manager or other accountable official. The records can be either stored or destroyed. Instructions are given for the separate disposal of the following types of records: general office records;

scientific and technical program records, program management records, data and specifications records; technical report files; audiovisual records; and personal files. F.M.R.

N86-15174*# National Aeronautics and Space Administration. John F. Kennedy Space Center, Cocoa Beach, FL.

OFFICE AUTOMATION: THE ADMINISTRATIVE WINDOW INTO THE INTEGRATED DBMS

G. H. BROCK In NASA. Johnson (Lyndon B.) Space Center R and D Productivity New Challenges for the US Space Program p 192-201 1985 Avail: NTIS HC A25/MF A04 CSCL 05/2

In parallel to the evolution of Management Information Systems from simple data files to complex data bases, the stand-alone computer systems have been migrating toward fully integrated systems serving the work force. The next major productivity gain may very well be to make these highly sophisticated working level Data Base Management Systems (DBMS) serve all levels of management with reports of varying levels of detail. Most attempts by the DBMS development organization to provide useful information to management seem to bog down in the quagmire of competing working level requirements. Most large DBMS development organizations possess three to five year backlogs. Perhaps Office Automation is the vehicle that brings to pass the Management Information System that really serves management. A good office automation system manned by a team of facilitators seeking opportunities to serve end-users could go a long way toward defining a DBMS that serves management. This paper will briefly discuss the problems of the DBMS organization, alternative approaches to solving some of the major problems, a debate about problems that may have no solution, and finally how office automation fits into the development of the Manager's Management Information System. Author

N86-16923# National Bureau of Standards, Gaithersburg, MD.
REFERENCE MODEL FOR DBMS (DATABASE MANAGEMENT SYSTEM) STANDARDIZATION

D. K. JEFFERSON and E. N. FONG May 1985 79 p (PB85-225217; NBSIR-85/3173) Avail: NTIS HC A05/MF A01 CSCL 09/2

Reference Model (RM) for database management system (DBMS) standardization. A Reference Model is a conceptual framework whose purpose is to divide standardization work into manageable pieces and to show at a general level how these pieces are related with each other. The proposed RM comprises a data mapping control system (DMCS) that retrieves and stores application data, application schemas, and data dictionary schemas. This DMCS is bounded by two interfaces, the data language (DL) interface which defines the services offered by the DMCS to various data management tools (DMT), and the internal data language (-DL) interface which defines the services required by the DMCS from the host operating system. Two candidates for standardization, the DL and the -DL are proposed. GRA

N86-18004# National Bureau of Standards, Gaithersburg, MD. Center for Programming Science and Technology.

TECHNICAL OVERVIEW OF THE INFORMATION RESOURCE DICTIONARY SYSTEM

A. GOLDFINE and P. KONIG Apr 1985 135 p (PB85-224491; NBSIR-85/3164) Avail: NTIS HC A07/MF A01 CSCL 09/2

A technical overview of the computer software specifications for the information Resource Dictionary System (RDS) is presented. It summarizes the data architecture and the software functions and processes of the IRDS. The IRDS Specifications are a draft proposed American National Standard, a draft proposed U.S. Federal Information Processing Standard, and a Working Document of the International Organization for Standardization (ISO), Subcommittee 21, Working Group 3. The overview also provides background information on the development of the draft proposed U.S. standards. GRA

IRM ACTIVITIES AND PLANNING

N86-18246# Oak Ridge National Lab., TN.
INFORMATION SYSTEMS DEVELOPMENT AIDS
M. L. EMRICH and R. BRYANT Aug. 1985 117 p
(Contract DE-AC05-84OR-21400)
(DE85-018161; ORNL/TM-9647) Avail: NTIS HC A06/MF A01

Information engineers use a variety of techniques, procedures and methodologies to specify, design, program, test, and maintain Information Systems. Various automated tools are available for assisting the information engineer in this work. This document seeks to provide a general overview of the development life-cycle process and of tools available for assisting in that process. DOE

N86-19960# Office of Technology Assessment, Washington, DC.
INFORMATION TECHNOLOGY R AND D: CRITICAL TRENDS AND ISSUES
Feb. 1985 52 p
(PB85-245660; OTA-CIT-268, LC-84-601150) Avail: NTIS HC A04/MF A01 CSCL 09/2

Four specific areas of research as case studies are examined: (1) computer architecture; (2) artificial intelligence; (3) fiber optics; and (4) software engineering. The structure and orientation of some selected foreign programs are discussed. A set of issues that have been raised in the course of the study manpower, institutional change and the new research organizations that grew out of Bell Laboratories and implications of trends in overall science and technology policy are examined. GRA

N86-25299# Office of Management and Budget, Washington, DC.
MANAGING FEDERAL INFORMATION RESOURCES: REPORT UNDER THE PAPERWORK REDUCTION ACT OF 1980
Sep. 1985 54 p refs
(PB86-247682; AR-4) Avail: NTIS HC A04/MF A01 CSCL 05/2

Topics covered include controlling paperwork (information collection reviews, the information collection budget, other paperwork reduction act activities, legislative activities and issues, delegation of clearance authority), information policy (information technology planning process, federal information policy circular, federal telecommunications systems, security of information technology systems, protecting personal privacy, coordination of U.S. Government information flows in support of international affairs, Office of Management and Budget's leadership role); and statistical policy (long range planning, evaluation, coordination standards, major statistical policy issues addressed in 1984 to 1985) GRA

N86-27110# George Mason Univ., Fairfax, VA. Technology Transfer Study Center.
TECHNOLOGY TRANSFER DARPA: THE DEFENSE ADVANCED RESEARCH PROJECTS AGENCY. EXECUTIVE SUMMARY
R. G. HAVELOCK and D. S. BUSHNELL Dec. 1985 15 p refs
(Contract MDA903-84-K-0031, ARPA ORDER 5156)
(AD-A164503) Avail: NTIS HC A03/MF A01 CSCL 05/1

Five distinct transfer issues were uncovered, namely (1) transfer within programs (intra-transfer), (2) transfer to military users (hand-off), (3) transfer to non-military users (spin-off), (4) undesired transfer or leakage (defined as the problem of knowledge containment), and (5) transfer into DARPA from other sources (in-transfer) Five specific recommendations are offered for early action to begin a more coherent and aggressive approach to transfer issues within the Agency First, the Agency should immediately appoint a technology transfer facilitator to oversee the transition of developed technology to military use. Second, it should develop a state-of-the-art on-line retrieval system for tracking data on all projects and proposals. Third, it should develop a new system of program tracking to identify critical stages and outcomes, which we call transition analysis Fourth, it should convene a panel on access to unclassified technical knowledge.

Finally, it should establish an annual forum for the review of newly emerging technologies. A brief summary of each recommendation is given. GRA

N86-30378*# National Aeronautics and Space Administration. Marshall Space Flight Center, Huntsville, AL.
SEARCH AND RETRIEVAL OF OFFICE FILES USING DBASE 3
W. L. BREAZEALE and C. R. TALLEY Aug. 1986 85 p
(NASA-TM-86550; NAS 1.15:86550) Avail: NTIS HC A05/MF A01 CSCL 09/2

Described is a method of automating the office files retrieval process using a commercially available software package (dBASE III). The resulting product is a menu-driven computer program which requires no computer skills to operate. One part of the document is written for the potential user who has minimal computer experience and uses sample menu screens to explain the program; while a second part is oriented towards the computer literate individual and includes rather detailed descriptions of the methodology and search routines. Although much of the programming techniques are explained, this document is not intended to be a tutorial on dBASE III. It is hoped that the document will serve as a stimulus for other applications of dBASE III.

Author

N86-33200# Texas A&M Univ., College Station. College of Business Administration.
ORGANIZATION AS INFORMATION PROCESSING SYSTEMS: TOWARD A MODEL OF THE RESEARCH FACTORS ASSOCIATED WITH SIGNIFICANT RESEARCH OUTCOMES
R. L. DAFT, R. W. GRIFFIN, and V. YATES Apr. 1986 59 p
(Contract N00014-83-C-0025)
(AD-A168018; TR-DG-19-ONR) Avail: NTIS HC A04/MF A01 CSCL 05/2

Three models with the potential to explain significant organizational research outcomes were proposed and tested. Fifty-six organizational scholars were surveyed about one significant and one not-so-significant research project. The findings identified several reported factors that occurred prior to and during research projects that were related to research outcomes. The Ambidextrous model, which includes both organic and mechanistic research characteristics, differentiated significant from not-so-significant research better than the Davis and Antecedents models.

Author (GRA)

N86-33201# Texas A&M Univ., College Station Dept. of Management
ORGANIZATIONS AS INFORMATION PROCESSING SYSTEMS: ENVIRONMENTAL CHARACTERISTICS, COMPANY PERFORMANCE AND CHIEF EXECUTIVE SCANNING, AN EMPIRICAL STUDY
R. DAFT, J. SORMUNEN, and D. PARKS Apr. 1986 59 p
(Contract N00014-83-C-0025)
(AD-A168035; TR-DG-20-ONR) Avail: NTIS HC A04/MF A01 CSCL 05/2

Chief executives in fifty manufacturing companies were interviewed about the perceived strategic uncertainty in six environmental sectors, and the frequency and mode of scanning used for each sector. The findings suggest customer, economic, and competitor sectors generated greater strategic uncertainty than technological, regulatory, and socio-cultural sectors. When sector uncertainty was high, executives reported greater frequency of scanning and greater use of personnel information sources. Chief executives in high performing companies scanned more frequently and more broadly in response to strategic uncertainty than their counterparts in low performing companies. GRA

N86-33204# General Accounting Office, Washington, DC. General Government Div.
FREEDOM OF INFORMATION ACT: NONCOMPLIANCE WITH AFFIRMATIVE DISCLOSURE PROVISIONS
Apr. 1986 36 p
(AD-A168589, GAO/GGD-86-68) Avail: NTIS HC A03/MF A01 CSCL 05/1

To determine whether federal agencies were complying with the Freedom of Information Act's (FOIA) affirmative disclosure requirements, we interviewed officials of component organizations of the 13 cabinet-level departments and the Veterans Administration and evaluated their procedures. Our review was designed to assess compliance efforts at these organizations only, and the results can not be projected to the departments as a whole or to other organizations subject to FOIA requirements. At the 14 organizations we found that: in 13 instances, the U.S. Government organizations did not publish or keep current information on their central and field organizations, in six instances, organizations' published statements on where the public could obtain information were out of date; and one organization did not publish procedural information on its system of hearings and appeals. Officials in the 14 organizations attributed noncompliance with subsection (a)(1) to such reasons as delays in internal rules clearance processes, frequent agency reorganizations, and administrative error. Officials in some organizations also felt that publication of organization material in The United States Government Manual was sufficient compliance. In 20 instances, 60% of the organizations were not in full compliance with subsection (a)(2) requirements. Thus, these organizations did not provide members of the public the means to routinely identify and inspect all materials they might require in dealing with the organizations. GRA

N86-33206# Department of Energy, Washington, DC Office of Computer Ser. and Telecommunications.

INFORMATION TECHNOLOGY RESOURCES LONG-RANGE PLAN, FY 1987-FY 1991

Dec. 1985 228 p

(DE86-010457, DOE/MA-0048-4) Avail. NTIS HC A11/MF A02

The objective of this plan is to describe the information technology resources and capabilities of the Department, the future requirements, and the strategies and plans to satisfy the identified requirements. The long-range planning process provides the systematic means to meet this objective and assists the Department in assuring that information technology support is provided in an efficient, effective, and timely manner so that the programmatic missions can be accomplished. Another objective of the Plan is to promote better understanding, both within and external to the Department, of its information technology environment, requirements, problems, and recommended solutions. The Plan covers the five-year period from fiscal year 1987 through 1991. It takes into consideration the information technology resource requirements of more than 52 different Departmental components and contractors. The IS section and resource identification is limited to business and project management type applications used by Departmental components. DOE

N87-13353# Naval Postgraduate School, Monterey, CA
FEDERAL INFORMATION SYSTEMS MANAGEMENT: PROBLEMS, SOLUTIONS AND MORE PROBLEMS Final Report

D C BOGER, C. R. JONES, and N R. LYONS Jul 1986 28 p

(AD-A171366, AD-F250645, NPS-54-86-006) Avail. NTIS HC A03/MF A01 CSCL 05/1

Although there are numerous problems associated with the management of Federal information systems, the usual solutions proposed for these problems have had and will have little, if any, effects. This paper examines the characteristics of Federal information systems and shows that most proposed solutions are directed at symptoms of the problems and not at their underlying causes. These solutions do not reflect the public sector nature of Federal information systems and hence, are either unrealistic or ineffectual. The authors do not propose another panacea. GRA

N87-15902# Defense Technical Information Center, Alexandria, VA.

SYSTEMATIC CORPORATE PLANNING AT DTIC (DEFENSE TECHNICAL INFORMATION CENTER) Final Report

GEORGENE C. CHASTAIN and R R. PARRIS Aug 1986

18 p

(AD-A171525, DTIC/TR-86/19) Avail. NTIS HC A03/MF A01 CSCL 05/1

The Defense Technical Information Center (DTIC) has recently committed itself to a long-range corporate planning process. The purpose of this technical report is to describe this corporate planning process, to document those steps DTIC has taken to implement the corporate plans, and to present lessons learned for use in future planning endeavors. Author (GRA)

N87-20131# Naval Postgraduate School, Monterey, CA.
TOWARD HIGHLY PORTABLE DATABASE SYSTEMS: ISSUES AND SOLUTIONS M.S. Thesis

ALBERT WONG Jun 1986 93 p

(AD-A174635) Avail. NTIS HC A05/MF A01 CSCL 09/2

The multi-backend database system (MBDS) is a database system of two or more processors and their dedicated disk subsystems. One of the processor serves as a controller. The rest of the processors and their disks serves as backends to provide the primary and parallel database operations. User access to the MBDS is accomplished either via a host computer which in turn communicates with the controller, or with the MBDS controller directly. The thesis is aimed to examine the portability of MBDS. By downloading the MBDS software from the configuration of VAX and PDP hardware and VMS and RSX operating systems to the configuration of the 32-bit microprocessor-based ISI hardware and UNIX operating system, we hope to determine the necessary amount of hardware-and-operating-system-dependent modifications and reinstrumentations in order to make the downloading successful. The ultimate goal of the thesis is to recommend to the future database-system designer the way to minimize the amount of configuration-dependent software and to strive for a truly and highly portable system to be used on various configurations. This thesis has identified three major portability issues and provided solutions to them. They are the multiple-record template support, the interprocess communication via broadcasting, and the disk I/O for the real-time access. GRA

N87-21737# National Archives and Records Service, Washington, DC. Archival Research and Evaluation Staff.

MARC (MACHINE READABLE CATALOG) FORMAT AND LIFE CYCLE TRACKING AT THE NATIONAL ARCHIVES: A STUDY Final Report

E HEDLIN and T E WEIR May 1986 343 p

(PB87-126256, NARA/TIP-86/02) Avail. NTIS HC A15/MF A02 CSCL 05/2

The National Archives conducted an 18 month study of life cycle tracking of records, the Machine Readable Catalog/Archival and Manuscript Control format (MARC/AMC), and the Research Libraries Information Network (RLIN). Life cycle tracking is the ability for the National Archives to capture and exchange information about Federal records from their creation to their destruction or use in an archives. It is proposed that the National Archives adopt the concept of life cycle tracking. This will require some changes in current procedures and the standardization of fields and vocabularies. The MARC/AMC is a data exchange format recently adopted by the Society of American Archivists for information interchange. The study found the format contained fields adequate for the description of Federal records. The format, however, does not support needed data structures. The Research Libraries Information Network is an information sharing service of the Research Libraries Group. RLIN was found to be a medium for the exchange of information but was not found to be suitable as the primary automation tool for the National Archives and Record Administration. Author

N87-22551# General Accounting Office, Washington, DC
SPACE OPERATIONS: NASA'S USE OF INFORMATION TECHNOLOGY. REPORT TO THE CHAIRMAN, COMMITTEE ON SCIENCE, SPACE AND TECHNOLOGY

Apr. 1987 67

(GAO/IMTEC-87-22551, B-226577) Avail. NTIS HC A04/MF A01

An overview of the information technology that is critical to

IRM ACTIVITIES AND PLANNING

the missions of NASA are provided. Planning, development, and use of information for three areas (Space Transportation System, space stations, and unmanned space exploration) are discussed. B.G.

N87-24227# Assistant Secretary of Defense (Comptroller), Washington, DC.

DOD (DEPARTMENT OF DEFENSE) PROCEDURES FOR MANAGEMENT OF INFORMATION REQUIREMENTS

R. DRAKE Nov. 1986 112 p
(PB87-155495; DOD-7750.5-M) Avail. NTIS HC A06/MF A01 CSDL 05/1

The Manual guides action officers who need to establish reports or obtain information from the public, other Federal agencies, or DoD Components and provides them with the necessary information to license their information requirements. In addition, it contains information to assist program managers in the operation of their reports management programs. GRA

N87-25878# Office of Management and Budget, Washington, DC.

MANAGING FEDERAL INFORMATION RESOURCES: REPORT UNDER THE PAPERWORK REDUCTION ACT OF 1980 Annual Report No. 5

Apr. 1987 62 p
(PB87-114138) Avail. NTIS HC A04/MF A01 CSDL 05/2

The report describes the Office of Management and Budget's progress in managing and overseeing information gathering, processing, and dissemination functions of the Federal government. It includes progress and continuing efforts in strengthening information management within the Federal government, improving Federal statistical programs and reducing information collection burdens imposed upon the public as well as State and local governments. GRA

N87-26680# National Technical Information Service, Springfield, VA.

STRATEGIC PLANNING PROCESS AT THE NATIONAL TECHNICAL INFORMATION SERVICE

JOSEPH F. CAPONIO and DONALD S. BUDOWSKY In Advisory Group for Aerospace Research and Planning and Designing Effective Defence and Related Information Services 6 p Apr 1987

Copyright Avail. NTIS HC A06/MF A01

External trends such as the growth of the information society, the increasing economic value of information, the growth of research and development, funding, and advances in automation have dictated the need for information services to have a strong commitment to strategic planning. These trends are discussed and the strategic planning process at the National Technical Information Service (NTIS) is outlined. Author

N87-28458# Environmental Protection Agency, Washington, DC. Information Management and Services Div.

BIBLIOGRAPHY ON INFORMATION RESOURCES MANAGEMENT

Nov. 1985 45 p
(PB87-185997; EPA/IMSD-85/003) Avail. NTIS CSDL 05/2

The bibliography documents the controversy over the definition of information resources management (IRM) from office automation systems and management information systems to the current user oriented state of the art. It includes citations from 1980, when the Paperwork Reduction Act was passed, to the present. A survey of expert opinion of future developments of IRM is included, as are case studies of IRM as implemented in various organizations. Author

N87-29371# Virginia Polytechnic Inst. and State Univ., Blacksburg. Management Systems Labs.

RESEARCH AND DEVELOPMENT OF MODELS AND INSTRUMENTS TO DEFINE, MEASURE, AND IMPROVE SHARED INFORMATION PROCESSING WITHIN GOVERNMENT OVERSIGHT AGENCIES Annual Performance Report, Aug. 1986 - Feb. 1987

H. A. KURSTEDT, JR. 1987 45 p
(Contract DE-FG05-86DP-70033)
(DE87-012473; DOE/DP-70033/1) Avail. NTIS HC A03/MF A01

The tangible result of the research effort will be an integrated set of descriptive, prescriptive, predicative, performance, and responsive tools that will collectively allow government oversight agencies (GOAs) to increase their performance to the highest levels possible. GOAs will see increases in productivity, fewer conflicts between headquarters and the field, greater motivation on the part of personnel who actively share in the process of decision making, and greater credibility with Congress, the public, and the media. This results from the consistency and integrity of data and information - and the correct perception of government running a tight ship. DOE

N88-11571# Center for Social and Economic Issues, Ann Arbor, MI.

IMPLEMENTING AND MANAGING CHANGE: A GUIDE FOR ASSESSING INFORMATION TECHNOLOGY

J. A. MORELL, R. GRyder, and M. FLEISCHER Aug. 1987 100 p Prepared in cooperation with ORNL, Tenn.

(Contract DE-AC05-84OR-21400)
(DE88-000035; ORNL/TM-10520) Avail. NTIS HC A05/MF A01

Assessing the impact of office automation (OA) requires expertise in the generic aspects of evaluation and innovation adoption, combined with specialized knowledge of OA. There is an extensive literature on the two generic subjects, but no companion literature concerning the application of the knowledge to the unique case of OA. By providing that specialized information, this report assists the implementors of OA in two ways: it shows them how to monitor implementation efforts, thus providing feedback to facilitate adoption of OA technology; and it provides guidance for measuring OA's impact on people and organizations. The report assumes an immediate impact of OA on the work groups where the technology is implemented, and a continually spreading effect from that locus of immediate use. Included in the report are discussions of: sources of data, methods of data collection, factors which affect implementation, and measures of impact. Special attention is given to measuring productivity changes that may result from the use of OA. A detailed appendix supplies a variety of examples which show how the variables discussed in the report were actually measured in applied settings. DOE

N88-12412*# Draper (Charles Stark) Lab., Inc., Cambridge, MA **ADVANCED INFORMATION PROCESSING SYSTEM (AIPS) PROOF-OF-CONCEPT SYSTEM FUNCTIONAL REQUIREMENTS I/1 NETWORK SYSTEM SERVICES**

28 Feb. 1985 44 p
(Contract NAS9-16023)
(NASA-CR-181481; NAS 1.26:181481; CSDL-AIPS-84-138)
Avail. NTIS HC A03/MF A01 CSDL 05/2

Requirements for input/output user communication; network control, status logging, collection, and reporting, test support, and functional interfaces are presented. B.G.

N88-12415# Du Pont de Nemours (E. I.) and Co., Aiken, SC. Savannah River Plant.

ELECTRONIC RECORDS ADMINISTRATION AT THE SAVANNAH RIVER PLANT

B. J. HUDSON 1987 14 p Presented at the Department of Energy Automated Office Support System Conference, Denver, Colo., 7-8 Oct. 1987 Submitted for publication
(Contract DE-AC09-76SR-00001)

(DE87-014842; DP-MS-87-103, CONF-8710132-4) Avail. NTIS HC A03/MF A01

The Savannah River Plant (SRP), operated by DuPont for the

Department of Energy (DOE), is faced with the problem of providing ready access to information. A sitewide information network has been installed implementing electronic mail (ALL-IN-1) and various other office automation features. However, users need access to information contained in manuals, earlier research reports, and technical publications located in the central files. Planning is under way to procure a document and information storage and retrieval system linked to the sitewide information network. The system should provide retrieval of image scans of any document via full text and keyword searching of current and archived documents. Old documents will be input to the system through a high-speed image scanning system and optical disk storage. Optical character recognition (OCR) will be performed on these images and the resulting text stored in a document search and retrieval system. A user will utilize the search system to identify the documents needed, and retrieve either the text only from the search system or the image scan from the optical storage system. DOE

**N88-12417# Oak Ridge National Lab, TN.
THE IMPACT OF INFORMATION TECHNOLOGY ON
RESEARCH IN SCIENCE AND ENGINEERING**

JONATHAN A. MORELL 1987 29 p Presented at the Howard R. Davis Society for Knowledge Utilization, Pittsburgh, Pa., 9 Oct. 1987

(Contract DE-AC05-84OR-21400)

(DE88-000342, CONF-8710147-1) Avail: NTIS HC A03/MF A01

There is little research on the impact of information technology (IT) on how research is carried out by scientists and engineers. This paper draws on other bodies of writings which indirectly shed light on this question. Included are: the role of calculation in research, scientific productivity, the philosophical underpinnings of science and technology, systems analysis, and the use of computer aided design in engineering. A model is developed which helps identify the types of impact that IT may have on social system and epistemological aspects of research. Factors are hypothesized which may explain why IT may have particular effects in any given research endeavor. DOE

N88-16577*# National Academy of Sciences - National Research Council, Washington, DC.

CRITICAL ISSUES IN NASA INFORMATION SYSTEMS Final Report

Jun. 1987 68 p

(Contract NASW-4124)

(NASA-CR-182380, NAS 1 26 182380, PB88-101027) Avail: NTIS HC A04/MF A01 CSCL 05/2

The National Aeronautics and Space Administration has developed a globally-distributed complex of earth resources data bases since LANDSAT 1 was launched in 1972. NASA envisages considerable growth in the number, extent, and complexity of such data bases, due to the improvements expected in its remote sensing data rates, and the increasingly multidisciplinary nature of its scientific investigations. Work already has begun on information systems to support multidisciplinary research activities based on data acquired by the space station complex and other space-based and terrestrial sources. In response to a request from NASA's former Associate Administrator for Space Science and Applications, the National Research Council convened a committee in June 1985 to identify the critical issues involving information systems support to space science and applications. The committee has suggested that OSSA address four major information systems issues: centralization of management functions, interoperability of user involvement in the planning and implementation of its programs, and technology. GRA

**N88-18510# Oak Ridge National Lab, TN
GUIDELINES FOR EXCHANGING COMPUTERIZED
INFORMATION**

R. J. OLSON, T. A. BODEN, J. A. SOLOMON, V. H. DALE, and S. W. CHRISTENSEN 1987 6 p Presented at the Piecing the Puzzle Together: A Conference on Integrating Data for Decisionmaking, Washington, D.C., 27 May 1987

(Contract DE-AC05-84OR-21400)

(DE88-004736, CONF-8705147-4) Avail: NTIS HC A02

The exchange of computerized information is becoming more routine, however, it is often a time-consuming and frustrating process. Based on our experience in developing several large data bases at Oak Ridge National Laboratory, we estimate that there may be problems with at least one-third of the data files that are received or sent. The average time required to process data transferred from extant sources (based on records for 56 transfers) increased 37 percent when problems were encountered compared with the average processing time required for data files without significant problems. The majority of problems were related to inadequate documentation (49 percent). Other problems included hardware or software incompatibilities, errors in the tape or disk, errors or inconsistencies in the data, and transmittal of the wrong data set. Based on this analysis, we have developed guidelines for exchanging computerized information, giving the types of information needed to adequately document a file, define the transfer medium, and verify that information is correctly received. The guidelines are meant to be adapted to individual situations as appropriate. DOE

**N88-23680# Army Engineer Studies Center, Fort Belvoir, VA.
THE ENGINEER STUDIES CENTER GUIDE TO RESEARCH
AND DATA COLLECTION Final Report, Sep. - Oct. 1987**

RICHARD L. TAYLOR, DOUGLAS LEHMAN, and JILL DAVIS 30 Nov. 1987 31 p

(AD-A189971; USAESC-R-88-2) Avail: NTIS HC A03/MF A01 CSCL 12/1

This paper provides tips and guidelines for use in facilitating better research and data collection when undertaking US Army studies and analysis. It is intended for use by analysts and military planners at the US Army Engineer Studies Center (ESC). However, the tips provided herein are applicable throughout the US Army study analysis community. This report specifically gives background on the ESC study process, focuses on the research phase of the ESC study process, provides ten tips for better research and data collection, and provides several observations on the research collection process. An annex listing selected libraries used often by ESC analysts is also provided. GRA

**N88-30354*# National Aeronautics and Space Administration
Goddard Space Flight Center, Greenbelt, MD.**

**AUTOMATED CATALOGING AND CHARACTERIZATION OF
SPACE-DERIVED DATA**

WILLIAM J. CAMPBELL, LARRY ROELOFS, and MICHAEL GOLDBERG (Mitre Corp., McLean, Va.) In: *The 1988 Goddard Conference on Space Applications of Artificial Intelligence* p 343-354 Aug. 1988

Avail: NTIS HC A19/MF A03 CSCL 05/2

One of the most significant technical issues that NASA must address and resolve is the problem of managing the enormous amounts of scientific and engineering data that will be generated by the next generation of remote sensing systems such as the Hubble Space Telescope (HST) and the Earth Observing System (EOS). The amount of data these sensors are expected to produce will be orders of magnitude greater than NASA has ever experienced. Consequently new solutions must be developed for managing, accessing, and automatically inputting the data into a database in some expressive fashion that will provide a meaningful understanding and effective utilization of this data in a multidisciplinary environment. Presently, scientific data provided by satellites and other sources are processed, cataloged, and archived according to narrow mission or project-specific requirements with little regard to the semantics of the overall research. Scientists therefore lack knowledge of or access to potentially valuable data outside their own field. What is needed is an innovative approach that will allow collected data to be automatically cataloged, characterized, and managed in a domain-compatibility. A concept and design approach that employs expert system-based knowledge controllers combined with advanced spatial database systems and graphical data structures is discussed. Author

IRM ACTIVITIES AND PLANNING

N88-30457# Massachusetts Inst. of Tech., Cambridge.
STRATEGIC, ORGANIZATIONAL AND STANDARDIZATION ASPECTS OF INTEGRATED INFORMATION SYSTEMS, VOLUME 6 Final Report, Sep. 1985 - Jan. 1988
AMAR GUPTA and STUART MADNICK Dec. 1987 259 p
Sponsored in part by DOT, DOD and AF
(Contract DTRS57-85-C-00083)
(AD-A195855; AD-E500978; MIT-KBIIE-6) Avail. NTIS HC A12/MF A02 CSDL 12/7

This volume highlights key strategic and organizational issues involved in integrating heterogeneous information systems. It is divided into four parts. The first part, Towards a CIS Model for Strategic Applications, explores the nature of strategic goals underlying composite information systems (CIS) and ways to increase the likelihood of success. These aspects are analyzed using an example in which the relationship between the constituents is loosely-coupled and inter-dependent. The second part, Interorganizational Information Systems Via Information Technology: A Network Perspective, deals with the evolution of organizational theory and the importance of inter-organizational information networks. By effective establishment and use of these networks, participating organizations can realize competitive advantages in the marketplace. The third part, The Use of Standard Data Definitions in Composite Information Systems, describes the problems involved in establishing common standards. The fourth part describes a methodology for the development of standards for data exchange in an integrated environment. GRA

N89-11403# Air Force Inst. of Tech., Wright-Patterson AFB, OH.
THE USE OF PORTABLE MICROCOMPUTER AS A DATA COLLECTION TOOL TO SUPPORT INTEGRATED SIMULATION SUPPORT ENVIRONMENTS: A CONCEPT M.S. Thesis
JAMES E. WILKINSON 1988 122 p
(AD-A196414; AFIT/CI/NR-88-76) Avail. NTIS HC A06/MF A01 CSDL 12/5

While an integrated simulation environment provides a more organized structure for managing and performing simulation projects, and provides a database management structure for storing, manipulating, and analyzing data, they do not address the actual process of going out and obtaining the data. As a result, many of the common problems associated with poor problem and system definition, and low quality model input data, may still occur. To solve this problem, this study examines the concept of developing a support-support system, a portable microcomputer with software tools designed to support collection of the data, both subjective and objective, required in a simulation study. This data can then be ported into the integrated support system for analysis and model development. In developing this concept, the simulation process is better defined using structured analysis diagrams. Based on this analysis the functions that a support-support system could best accomplish are identified and a conceptual specification developed. An implementation strategy is proposed which is based on the use of readily available software tools, such as dBASE III, and the use of a simple programming language, such as BASIC. To demonstrate how this strategy can be implemented, a BASICA program was developed to support model input data collection. Using a graphic display to define input data requirements and single key inputs, this program should maximize the time an analyst can spend observing the system and minimize the time spent on entering data. GRA

N89-11412# National Bureau of Standards, Gaithersburg, MD
Information Systems Engineering Div.
STANDARDS CONFORMANCE TESTING Report, 1980 - 1987
SHARON J. KEMMERER May 1988 61 p
(PB88-215645; NBSIR-88/3768) Avail. NTIS HC A04/MF A01 CSDL 09/2

The NBSIR suggests a process to follow when developing a conformance testing program for appropriate NBS/ICST Federal Information Processing Standards (FIPS). These FIPS and the standards they are promoting are implemented into software products by commercial use. A consistent application of testing

processes and specific test suites will help align commercial products to conform to these standards. Application of such a testing process will become more critical as Federal agencies begin to request procurement of software implementing these standards. GRA

N89-11626# King Research, Inc., Rockville, MD.
EVALUATING THE EFFECTIVENESS OF INFORMATION USE
DONALD W. KING and JOSE-MARIE GRIFFITHS In AGARD,
Evaluating the Effectiveness of Information Centres and Services
5 p Sep. 1988
Copyright Avail: NTIS HC A05/MF A01

An approach to evaluating the use, usefulness and value of published/recorded information on the work of its users is described. The reading patterns of professionals and the application of information derived from reading is discussed in detail. Several different indicators of productivity of professionals are developed and correlated with the amount of reading that is done. Finally, several different perspectives on the value of information centers to the professionals they serve are presented. Author

N89-11629# King Research, Inc., Rockville, MD.
EVALUATING THE PERFORMANCE OF INFORMATION CENTRE STAFF
JOSE-MARIE GRIFFITHS and DONALD W. KING In AGARD,
Evaluating the Effectiveness of Information Centres and Services
11 p Sep. 1988
Copyright Avail: NTIS HC A05/MF A01

The framework for evaluation described in 'A Framework for Evaluating the Effectiveness of Information Centres and Services' for evaluating staff performance is used. Information center staff are a major resource affecting the overall performance and effectiveness of services provided. Various measures of staff performance are discussed (including quantities, quality and timeliness of staff outputs), and the relationship between staff performance and the effectiveness of services (from a user perspective) is demonstrated. Finally, alternative methods for measuring staff performance are described. Author

N89-11630# King Research, Inc., Rockville, MD
EVALUATING PERFORMANCE OF INFORMATION CENTRE OPERATIONS AND SERVICES
JOSE-MARIE GRIFFITHS and DONALD W. KING In AGARD,
Evaluating the Effectiveness of Information Centres and Services
8 p Sep. 1988
Copyright Avail: NTIS HC A05/MF A01

Evaluation of information center resources (e.g., staff, equipment, facilities, etc.) is discussed in terms of input costs, output performance, and productivity. Examples of evaluation of information services (e.g., access to technical reports and other publications, online bibliographic searches, published searches, etc.) are presented in terms of their input costs and output performance. The linking of resource attributes or characteristics (e.g., staff competencies, equipment capabilities, facility layout, etc.) to service input costs and output performance (e.g., quality and timeliness of services) is demonstrated. Thus, Center managers can make decisions about resources or allocation of funds involving resources in terms of services involved. A management information system for center management is also described. Author

N89-11631# King Research, Inc., Rockville, MD
A FRAMEWORK FOR EVALUATING THE EFFECTIVENESS OF INFORMATION CENTRES AND SERVICES
DONALD W. KING and JOSE-MARIE GRIFFITHS In AGARD,
Evaluating the Effectiveness of Information Centres and Services
14 p Sep. 1988
Copyright Avail: NTIS HC A05/MF A01

Evaluation is a subject of considerable attention at the current time. Three principal aspects of evaluation and information are presented here. The first involves the evaluation of information workers and services. The second deals with evaluation from the perspective of users served, their organizations and higher levels of aggregation such as to industries, sectors, the entire nation

and all nations. The third aspect is how information and information services affect users. Several levels within information service centers are described. One can perform evaluation at each of these levels (i.e., resource components, activities, services and products, functions and information units). That is, at each level one can measure input of resources (i.e., capital, labor, technology, information, etc.) and output quantities produced. Such output divided by input can provide estimates or indicators of productivity. The output of information services is one of several input resources to users. The extent to which this input affects output and productivity is of considerable interest. As shown in Figure 1 on the next page, the input resources (including information) affect user activities, their functions, their organizations, and so on, up to the point that aggregated information use and subsequent productivity affects national goals. Below we attempt to show how these interrelationships work. First, several definitions are given

Author

N89-11632# Bell Telephone Labs, Inc., Murray Hill, NJ Libraries and Information Systems.

EVALUATING FOR INFORMATION CENTER PLANNING

W. DAVID PENNIMAN / In AGARD, Evaluating the Effectiveness of Information Centres and Services 3 p Sep. 1988

Copyright Avail: NTIS HC A05/MF A01

A business-oriented approach to information center planning and evaluation is presented. The need for output measures a quantitative expression of service value is described and a method of planning incorporating these concepts is provided. Both top-down and bottom-up planning responsibilities are identified and the specific steps involved in a business planning process are given. The competitive nature of information service is emphasized throughout.

Author

N89-12486 Texas Univ., Austin.

DECISION-ORIENTED STRATEGIC PLANNING FOR INFORMATION SYSTEMS: APPLYING CONCEPTUAL MODELS OF CRISIS DECISION-MAKING TO STRATEGIC PLANNING FOR CRISIS MANAGEMENT DECISION SUPPORT SYSTEMS Ph.D. Thesis

FREDERICK MAXIMILLIA BOCK, IV 1987 348 p

Avail: Univ. Microfilms Order No. DA8806296

Information systems to support decision-making in crisis situations are examined. In particular, it addresses the issue of developing a strategic plan for crisis information systems in an organization. A review of the nature of crises, current information systems planning approaches, and the role of conceptual models in crisis decision making is presented. It is argued that planning strategies grounded in time-stable process models of an organization are inappropriate for crisis information systems planning. As contrasted with emergencies, crises are neither stable nor predictable and lack well-definable processes upon which to base a plan. An alternative planning strategy is proposed based upon developing an information structure using conceptual models of crisis decision-making, particularly the Garbage Can Model of organizational choice proposed by Cohan, March and Olsen (1972). This alternative strategy, Decision-Oriented Strategic Planning for Information Systems (DSP/IS) is applied in a major military medical command, the application domain addressed is medical crisis management. The results are evaluated and then compared with the results of IBM's Information Systems Planning (ISP) process previously applied in the same command

Dissert Abstr

N89-12488 National Academy of Public Administration, Washington, DC.

FEDERAL INFORMATION RESOURCES MANAGEMENT: BRIDGING VISION AND ACTION

SHARON L. CAUDLE Jun 1987 179 p

Copyright Avail: Issuing Activity

Information resources management (IRM) in federal cabinet-level executive departments and a random sample of bureaus under most of these departments is studied. An analysis of the perceptions of the managers and officials was performed. The study suggests three models for IRM in the federal government

an oversight model, a management model compared to the ideal IRM model in legislation and IRM founding documents, and a critical success factors model. Recommendations for practice are included. The study also recommends research in the areas of information management, IRM skills, resource control, and program level IRM.

B G

N89-14973# University of Southwestern Louisiana, Lafayette Center for Advanced Computer Studies.

AN OVERVIEW OF THE USL/DBMS NASA/PC R AND D PROJECT WORKING PAPER SERIES Final Report, 1 Jul. 1985 - 31 Dec. 1987

WAYNE D. DOMINICK, ed. 15 Aug. 1984 8 p Revised Prepared in cooperation with Southern Univ. Baton Rouge, LA (Contract NASW-3846; NGT-19-010-900) (NASA-CR-184533, NAS 1.26.184533, DBMS NASA/PC-R/D-1) Avail: NTIS HC A02/MF A01 CSDL 05/2

An introduction is given to the University of Southwestern Louisiana Data Base Management System (USL/DBMS) NASA/PC R and D Working Paper Series which has been established to provide a foundation for both a formal and informal information dissemination mechanism concerning PC-based research and development activities being performed pursuant to the NASA contract. This entry also serves as an index to the collection of Working Paper Series reports.

Author

N89-14977# University of Southwestern Louisiana, Lafayette Center for Advanced Computer Studies.

GENERAL SPECIFICATIONS FOR THE DEVELOPMENT OF A USL NASA PC R AND D STATISTICAL ANALYSIS SUPPORT PACKAGE Final Report, 1 Jul. 1985 - 31 Dec. 1987

WAYNE D. DOMINICK, ed., JINOUS BASSARI, and SPIROS TRIANTAFYLLOPOULOS 2 Aug. 1984 16 p Prepared in cooperation with Southern Univ., Baton Rouge, La (Contract NASW-3846; NGT-19-010-900) (NASA-CR-184537, NAS 1.26.184537, DBMS NASA/PC-R/D-5) Avail: NTIS HC A03/MF A01 CSDL 05/2

The University of Southwestern Louisiana (USL) NASA PC R and D statistical analysis support package is designed to be a three-level package to allow statistical analysis for a variety of applications within the USL Data Base Management System (DBMS) contract work. The design addresses usage of the statistical facilities as a library package, as an interactive statistical analysis system, and as a batch processing package.

Author

N89-14978# University of Southwestern Louisiana, Lafayette Center for Advanced Computer Studies.

GENERAL SPECIFICATIONS FOR THE DEVELOPMENT OF A USL/DBMS NASA/PC R AND D DISTRIBUTED WORKSTATION Final Report, 1 Jul. 1985 - 31 Dec. 1987

WAYNE D. DOMINICK, ed. and FRANK Y. CHUM 15 Aug. 1984 12 p Prepared in cooperation with Southern Univ. Baton Rouge, La. (Contract NASW-3846, NGT-19-010-900) (NASA-CR-184538, NAS 1.26.184538, DBMS NASA/PC-R/D-6) Avail: NTIS HC A03/MF A01 CSDL 05/2

The general specifications for the development of a PC-based distributed workstation (PCDWS) for an information storage and retrieval systems environment are defined. This research proposes the development of a PCDWS prototype as part of the University of Southwestern Louisiana Data Base Management System (USL/DBMS) NASA/PC R and D project in the PC-based workstation environment.

Author

N89-17545# Oak Ridge National Lab., TN.

LIFE CYCLE MANAGEMENT HANDBOOK

C. E. SYNDER, T. D. MOTT (Evaluation Research Corp., Vienna, VA.), and J. W. CRUTCHER Sep. 1988 118 p (Contract DE-AC05-84OR-21400) (DE89 004315, ORNL/DSRD-13) Avail: NTIS HC A06/MF A01

Life cycle management (LCM) is a standard management discipline for acquiring and using information system resources in a cost-effective manner throughout the life of an information

IRM ACTIVITIES AND PLANNING

system. Three life cycle management strategies are presented in this report. Section 2, which comprises most of the document, describes the full (five-phase) LCM strategy. The condensed LCM strategy and the one-phase LCM strategy are briefly discussed in Section 3. Appendix A gives examples of formats for system decision and project management documentation, Appendix B provides a list of defined acronyms, and an expanded contents, intended to serve as an index, appears in Appendix C. DOE

N89-18085# Naval Postgraduate School, Monterey, CA
A DATABASE APPROACH TO COMPUTER INTEGRATED MANUFACTURING Ph.D. Thesis

DANA E. MADISON Jun. 1988 320 p
(AD-A201030) Avail: NTIS HC A14/MF A02 CSCL 13/8

This work presents a new approach to the integration of manufacturing activities. The manufacturing environment has capitalized on the use of automation to evolve to a highly specialized state characterized by heterogeneous systems providing computer support to the various activities. Conventional approaches to integration assume that these activities must continue to exist in their current relationships. We use a database approach to the integration problem which removes the traditional boundaries between activities. We develop a data model which captures more of the semantics of the manufacturing environment than existing models and allows us to take a data-oriented perspective of the activities it encompasses. We also show how the use of the data-oriented approach provides for integration of these activities and reduces the complexity of the manufacturing environment. GRA

N89-18392# National Aeronautics and Space Administration
Ames Research Center, Moffett Field, CA.

THE IBM PC AT NASA AMES

JAMES P. PEREDO *In its* NASA Ames Summer High School Apprenticeship Research Program. 1986 Research Papers p 113-118 Sep. 1988

Avail: NTIS HC A07/MF A01 CSCL 09/2

Like many large companies, Ames relies very much on its computing power to get work done. And, like many other large companies, finding the IBM PC a reliable tool, Ames uses it for many of the same types of functions as other companies. Presentation and clarification needs demand much of graphics packages. Programming and text editing needs require simpler, more-powerful packages. The storage space needed by NASA's scientists and users for the monumental amounts of data that Ames needs to keep demand the best database packages that are large and easy to use. Availability to the Micom Switching Network combines the powers of the IBM PC with the capabilities of other computers and mainframes and allows users to communicate electronically. These four primary capabilities of the PC are vital to the needs of NASA's users and help to continue and support the vast amounts of work done by the NASA employees. Author

N89-20619# Institute for Computer Applications in Science and Engineering, Hampton, VA.

CUMULATIVE REPORTS AND PUBLICATIONS THROUGH DECEMBER 31, 1988 Final Report

Feb. 1989 64 p Prepared in cooperation with NASA, Langley Research Center, Hampton, VA
(Contract NAS1-18107; NAS1-18605)
(NASA-CR-181784, NAS 126.181784) Avail: NTIS HC A04/MF A01 CSCL 12/1

This document contains a complete list of ICASE Reports. Since ICASE Reports are intended to be preprints of articles that will appear in journals or conference proceedings, the published reference is included when it is available. Author

N89-21711# Air War Coll., Maxwell AFB, AL
NATIONAL SPACE POLICY

ELINEST B. SUTTON May 1988 93 p
(AD-A202644, AD-E900870) Avail: NTIS HC A05/MF A01 CSCL 22/1

National space policy forms the foundation for decisions and direction of the United States national space program. This review begins with the Eisenhower era and the launching of Sputnik 1, considered by most as the start of the space race with the Soviet Union for national space preeminence. Succeeding administrations are discussed to provide the historical setting affecting the actions of presidents, leaders within NASA, the DOD, and Congress as well as other players in the national space arena. This review analyzes the latest national space policy, established by President Reagan in February, 1988. Finally, specific space development programs are offered as topics which will demand the attention of future administrations. GRA

N89-22354# Air Force Inst. of Tech., Wright-Patterson AFB, OH. School of Systems and Logistics.

DEVELOPMENT OF A DBASE III PLUS DATABASE FOR OFFICE AUTOMATION WITHIN THE DEPARTMENT OF LOGISTICS MANAGEMENT, SCHOOL OF SYSTEMS AND LOGISTICS M.S. Thesis

JOHN H. BARNES Sep. 1988 119 p
(AD-A202628, AD-E900870, AFIT/GLM/LSM/88S-2) Avail: NTIS HC A06/MF A01 CSCL 12/5

The purpose of this thesis was to program a database system written in dBase III Plus for use in AFIT/LSM. The system was to be hosted on a personal computer so that it could be transportable between the different computers in the office and conveniently used by as many personnel as possible. The program was intended to replace as much manual paperwork as possible and to provide a means to quickly access, sort, and to efficiently answer queries regarding the department faculty. The final result was intended to automate the routine office functions. This automation would relieve the department personnel from mundane duties so that they could concentrate their time on more productive pursuits. The product of these efforts was the Integrated Faculty Information System (IFIS). The IFIS is a menu driven system that utilizes 19 databases that are interrelated to form one large database system. The database system has the capability to contain all the vital professional and demographic information on each member of the staff. The IFIS provides a means to input all the appropriate information and to modify preexisting information within the database system. GRA

N89-22527# Department of Energy, Washington, DC
INFORMATION TECHNOLOGY RESOURCES LONG-RANGE PLAN: FY90 TO FY94

Dec. 1988 325 p
(DE89-007784; DOE/MA-0351) Avail: NTIS HC A14/MF A02

The principle objective of the Information Technology Resources Plan is to describe the information technology resources and capabilities of the Department, the future requirements, and the strategies and plans to satisfy the identified requirements. The long-range planning process provides the systematic means to meet this objective and assists the Department in assuring that information technology support is provided in an efficient, effective, and timely manner so that the programmatic missions can be accomplished. Another important objective of the Plan is to promote better understanding, both within and external to the Department, of its information technology environment, requirements, issues, and recommended solutions as well as a description of the Departmental unclassified computer security program. DOE

N89-22528# Air Force Inst. of Tech., Wright-Patterson AFB, OH. School of Systems and Logistics.

PLANNING AND CONTROLLING THE ACQUISITION COSTS OF AIR FORCE INFORMATION SYSTEMS M.S. Thesis

THOMAS J. FALKOWSKI Dec. 1988 95 p
(AD-A204421; AFIT/GIR/LSY/88D-5) Avail: NTIS HC A05/MF A01 CSCL 12/7

The purpose of this thesis was to identify indicators that can be used to more efficiently control the acquisition costs of Air Force management information systems. Statistical analysis was performed on cost data collected from Cost/Schedule Status Reports from information systems acquired under Air Force

Logistics Command's Logistics Management Systems Modernization Program. Using regression analysis, an initial model was developed that showed the significance of various cost areas on contract performance. The model was then transformed and reduced, to include only those variables that added significantly to the prediction of contract performance. Based on the sample analyzed, the following cost areas were identified as key indicators of contract performance: Software, Test and Evaluation, Training, and Maintenance. Although the limited size of the sample data make the results inconclusive, the methodology presented here provides a means to identify potential indicators. The goal of this research was not to provide a definitive model that would help program managers to predict contractor performance. Instead, the goal was to establish procedures or motivation, for program managers to identify key control variables that can help them to manage their programs more efficiently in a time of austere budgets and restricted manpower availability. GRA

N89-23371# Horton (Forest W., Jr.), Washington, DC.

INFORMATION RESOURCES MANAGEMENT

FOREST W. HORTON, JR. In AGARD, The Organisation and Functions of Documentation and Information Centres in Defence and Aerospace Environments 5 p Mar. 1989
Copyright Avail: NTIS HC A06/MF A01

The transfer of scientific and technical information between and among nations poses increasing challenges because of: larger and larger volumes of data exchanged; the increasing variety of information interchange media; larger and larger numbers of intermediaries and end-users all along the information transfer chain; and increasing incompatibility of bibliographic and telecommunications formatting conventions. The emerging field of Information Resources Management (IRM) offers promise in helping to cope with these serious information exchanges. In particular, experiments in the U.S. Federal Government with a technique called information mapping, helps information managers identify, describe, inventory/survey, and control their total data, document, and literature flows and holdings, whether automated or manual, more completely. This approach of IRM, and the technique of information mapping, in several organizational contexts - one private (an Australian mineral and mining company), the other public (the U.S. Department of State) are introduced. Author

N89-27350# Edgerton, Germeshausen and Gner, Inc., Idaho Falls, ID.

ELECTRONIC INFORMATION DELIVERY AT THE JOB SITE

DONALD L. SCHURMAN and J. PETER KINCAID (Army Research Inst. for the Behavioral and Social Sciences, Orlando, FL.) 1988 5 p Presented at the IEEE International Conference on System Man and Cybernetics, Beijing, China, 1 Aug. 1988
(Contract DE-AC07-76ID-01570)
(DE89-009726; EGG-M-20887; CONF-8808208-1) Avail NTIS HC A01/MF A01

The United States Department of Defense is actively investigating the usefulness of presenting procedural information for operation and maintenance of equipment on small, often hand-held, computers. The basic concept that is being explored is: the presentation of information that is necessary to job performance by means of computers rather than by means of text and drawings printed on paper. The Idaho National Engineering Laboratory (INEL) assisted the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) in performing a test and evaluation of a prototype device that was an instantiation of the electronic information delivery concept. The prototype device is called the Personal Electronic Aid to Maintenance (PEAM). The device was tested as a substitute for technical manuals when being used by U.S. Army mechanics in the repair of the fire control system of the M1 Abrams tank. This test and evaluation of the PEAM prototype revealed several general problems for the electronic delivery of information in terms of the human-computer interaction involved. It became clear, for example, that formatting and graphical standards that apply to paper manuals will not apply to electronically presented procedures. Another problem that appeared was the problem of losing one's place in a

troubleshooting or other branching procedure. These and other problems are presented and suggestions are made for resolution of some, but not all, of these problems. DOE

N85-70762 Library of Congress, Washington, DC. Federal Library Committee.

EMERGING ISSUES ON MANAGING INFORMATION RESOURCES

N. E. GWINN 1984 14 p

N85-72768* National Aeronautics and Space Administration, Washington, DC.

INFORMATION PROCESSING RESOURCES MANAGEMENT

Apr. 1985 97 p
(NASA-TM-87468; NHB-2410 1D; NAS 1.15:87468) Avail. NTIS HC A05/MF A01

N85-74028# Coast Guard, Washington, DC. Office of Command, Control, and Communications.

U.S. COAST GUARD INFORMATION CENTER PLAN Final Report

F. N. SQUIRES Jan. 1984 19 p
(PB85-175644; DOT-SRP-84-6)

N86-71594# Office of Management and Budget, Washington, DC.

MANAGING FEDERAL INFORMATION RESOURCES: THIRD ANNUAL REPORT UNDER THE PAPERWORK REDUCTION ACT OF 1980

Jun. 1984 60 p
(PB84-228641, AR-3)

N87-70232 American Metric Council, Washington, DC.

GUIDELINES FOR METRIC TRANSITION OF SOFTWARE

Oct. 1985 23 p
(PB86-240215) Avail NTIS

N89-70432* National Aeronautics and Space Administration, Washington, DC.

THE PAD IS BACK

DALE MYERS Oct 1988 1 p Contained in NASA-SP-6101
Avail. NTIS

N89-70436* National Aeronautics and Space Administration, Washington, DC.

CONTROLLING RESOURCES IN THE APOLLO PROGRAM

C. THOMAS NEWMAN Oct 1988 4 p Contained in NASA-SP-6101
Avail. NTIS

N89-70676* National Aeronautics and Space Administration, Washington, DC.

THE CRISIS IN SPACE AND EARTH SCIENCE: A TIME FOR A NEW COMMITMENT

Nov. 1986 98 p Original document contains color illustrations
(NASA-TM-101290, NAS 1.15 101290) Avail NTIS

N89-71009#* Jet Propulsion Lab., California Inst of Tech., Pasadena.

PEAK POWER COST REDUCTION GUIDEBOOK Final Report, May 1983 - Dec. 1985

M. K. SELCUK and W. A. EDMISTON 15 Dec 1986 119 p
(Contract AF PROJ. 8336)
(NASA-CR-185020, NAS 1.15 185020, JPL-PUB-85-91, DEB-TR-86-03) Avail NTIS

COMPUTERS, TELECOMMUNICATIONS, AND NETWORKS

For IRM, high technology presents a double challenge: information management must make use of the best hardware and software for the job; however, procurement and application of main frames, minis, PC's, and LAN's can be problematic. Here is some help on how to use and control these tools.

A84-41197* Maryland Univ., College Park. INTERCONNECTING HETEROGENEOUS DATABASE MANAGEMENT SYSTEMS

V. D. GLIGOR (Maryland, University, College Park, MD) and G. L. LUCKENBAUGH Computer (ISSN 0018-9162), vol. 17, Jan. 1984, p. 33-43. Research supported by the National Bureau of Standards. refs
(Contract NAS5-27378)
Copyright

It is pointed out that there is still a great need for the development of improved communication between remote, heterogeneous database management systems (DBMS). Problems regarding the effective communication between distributed DBMSs are primarily related to significant differences between local data managers, local data models and representations, and local transaction managers. A system of interconnected DBMSs which exhibit such differences is called a network of distributed, heterogeneous DBMSs. In order to achieve effective interconnection of remote, heterogeneous DBMSs, the users must have uniform, integrated access to the different DBMSs. The present investigation is mainly concerned with an analysis of the existing approaches to interconnecting heterogeneous DBMSs, taking into account four experimental DBMS projects. G.R.

A84-44325* Jet Propulsion Lab., California Inst. of Tech., Pasadena.

ALGORITHM 607 - TEXT EXCHANGE SYSTEM: A TRANSPORTABLE SYSTEM FOR MANAGEMENT AND EXCHANGE OF PROGRAMS AND OTHER TEXT

W. V. SNYDER (California Institute of Technology, Jet Propulsion Laboratory, Pasadena, CA) and R. J. HANSON (Sandia National Laboratories, Albuquerque, NM) ACM Transactions on Mathematical Software (ISSN 0098-3500), vol. 9, Dec. 1983, p. 427-440. NASA-supported research. refs
(Contract AT(29-1)-789)
Copyright

A85-14469 MULTI-LEVEL SECURITY FOR COMPUTER NETWORKING - SAC DIGITAL NETWORK APPROACH

W. GRIESS (USAF, Strategic Air Command, Offutt AFB, NE) and D. L. POUTRE (Mitre Corp., Bedford, MA) IN: EASCON '83; Proceedings of the Sixteenth Annual Electronics and Aerospace Conference and Exposition, Washington, DC, September 19-21, 1983. New York, Institute of Electrical and Electronics Engineers, 1983, p. 483-495. USAF-supported research. refs
Copyright

The functional features and architecture of the SADCIN (SAC digital network) are detailed. SADCIN is the new data transmission segment for directing SAC's strategic forces. The system has 135 processor nodes at 32 locations and processes, distributes and stores data of any level of security classification. The sophistication of access nodes is dependent on the location. A reference monitor mediates the multilevel security by implementation of the multi-state machine concept, i.e., the Bell-LaPadula model (1973, 1974), which concludes that a secure state can never lead to an insecure state. The monitor is controlled by the internal access control mechanism, which resides in PROM. Details of the access process are provided, including message flow on trusted paths appropriate to the security clearance of the user M.S.K.

A86-20668* Jet Propulsion Lab., California Inst. of Tech., Pasadena.

CONCEPTS FOR A GLOBAL RESOURCES INFORMATION SYSTEM

F. C. BILLINGSLEY and J. L. URENA (California Institute of Technology, Jet Propulsion Laboratory, Pasadena) IN: Spatial information technologies for remote sensing today and tomorrow: Proceedings of the Ninth Pecora Symposium, Sioux Falls, SD, October 2-4, 1984. Silver Spring, MD, Institute of Electrical and Electronics Engineers, Inc., 1984, p. 123-131. NASA-supported research. refs
Copyright

The objective of the Global Resources Information System (GRIS) is to establish an effective and efficient information management system to meet the data access requirements of NASA and NASA-related scientists conducting large-scale, multi-disciplinary, multi-mission scientific investigations. Using standard interfaces and operating guidelines, diverse data systems can be integrated to provide the capabilities to access and process multiple geographically dispersed data sets and to develop the necessary procedures and algorithms to derive global resource information. Author

A87-48606*# National Aeronautics and Space Administration, Lyndon B. Johnson Space Center, Houston, TX.

SPACE STATION INFORMATION SYSTEM INTEGRATED COMMUNICATIONS CONCEPT

J. MURATORE, J. BIGHAM, V. WHITELAW, and W. MARKER (NASA, Johnson Space Center, Houston, TX) AIAA and NASA, International Symposium on Space Information Systems in the Space Station Era, Washington, DC, June 22, 23, 1987. 7 p.
(AIAA PAPER 87-2228) Copyright

This paper presents a model for integrated communications within the Space Station Information System (SSIS). The SSIS is generally defined as the integrated set of space and ground information systems and networks which will provide required data services to the Space Station flight crew, ground operations personnel, and customer communities. This model is based on the International Standards Organization (ISO) layered model for Open Systems Interconnection (OSI). The requirements used to develop the model are presented, and the various elements of the model described. Author

A87-48607*# National Aeronautics and Space Administration, Lyndon B. Johnson Space Center, Houston, TX.

SPACE STATION INFORMATION SYSTEM REQUIREMENTS FOR INTEGRATED COMMUNICATIONS

W. MARKER (NASA, Johnson Space Center, Houston, TX), V. WHITELAW, J. MURATORE, and J. BIGHAM, JR. AIAA and NASA, International Symposium on Space Information Systems in the Space Station Era, Washington, DC, June 22, 23, 1987. 5 p.
(AIAA PAPER 87-2229) Copyright

Space Station Information System (SSIS) requirements for integrated end-to-end communications are presented. The SSIS is defined as the integrated set of space and ground data and information systems and networks which will provide required data services to the Space Station flight crew, ground operations personnel, and customer communities. This model is based on the International Standards Organization (ISO) layered model for Open System Interconnection (OSI). These SSIS requirements include grades of service, priority classifications, systems management, flow control, bandwidth allocation, and standard SSIS data services. Author

A88-18630# INTEGRATED STRUCTURAL ANALYSIS FOR RAPID DESIGN SUPPORT

D G WONG and C R FULLER (Lockheed Missiles and Space Co., Inc., Sunnyvale, CA) (Structures, Structural Dynamics and Materials Conference, 27th, San Antonio, TX, May 19-21, 1986, Technical Papers Part 1, p. 638-645) Journal of Spacecraft and Rockets (ISSN 0022-4650), vol. 24, Sept.-Oct. 1987, p. 416-422.

Previously cited in issue 18, p 2657, Accession no. A86-38868.
refs
Copyright

A88-20252* Jet Propulsion Lab., California Inst. of Tech., Pasadena.

DATA ACCESS FOR SCIENTIFIC PROBLEM SOLVING

JAMES W. BROWN (California Institute of Technology, Jet Propulsion Laboratory, Pasadena) IN: Problem solving environments for scientific computing. Amsterdam, North-Holland, 1987, p. 33-46. refs
Copyright

An essential ingredient in scientific work is data. In disciplines such as Oceanography, data sources are many and volumes are formidable. The full value of large stores of data cannot be realized unless careful thought is given to data access. JPL has developed the Pilot Ocean Data System to investigate techniques for archiving and accessing ocean data obtained from space. These include efficient storage and rapid retrieval of satellite data, an easy-to-use user interface, and a variety of output products which, taken together, permit researchers to extract and use data rapidly and conveniently. Author

A88-51934#

THE SPECIFICATION AND DESIGN OF A SYSTEM USING COMPUTER-AIDED SOFTWARE ENGINEERING AND PERFORMANCE ANALYSIS TOOLS

B. E. CLARK, JANET R. DUNHAM, and DEBORAH L. FRANKE (Research Triangle Institute, Research Triangle Park, NC) AIAA, AHS, and ASEE, Aircraft Design, Systems and Operations Meeting, Atlanta, GA, Sept. 7-9, 1988, 8 p. refs
(AIAA PAPER 88-4410) Copyright

The combined use of computer-aided software engineering (CASE) and architecture design and assessment system (ADAS) methods for designing complex digital systems such as a guidance and control system is considered. Both CASE and performance analysis tools provide the consistency checking which is necessary to ensure a correct specification, and CASE tools provide extensive documentation features such as data dictionaries and the automatic generation of MIL STD 2167 specifications. ADAS tools provide an event list for ensuring correct performance in a real-time system, along with mapping capabilities which allow hardware constraints to be included in the analysis. R R

A88-55015

SATELLITE INFORMATION SYSTEMS

EDWARD S. BINKOWSKI (Strategic Comaps, Inc.; Hunter College; Fordham University, New York) Boston, MA, G. K. Hall Publishers, 1988, 223 p. refs
Copyright

Commercial applications of satellite technology are discussed in a general overview for potential users. Chapters are devoted to satellite information systems (including one-to-one, one-to-many, and many-to-one information transfer) regulation and competition in satellite communications, and a survey of currently open questions for users and operators. Directories of relevant publications and associations are provided. T.K

A89-12176

COPING WITH LEGACY FACTORS

D. L. BUNDY and J. A. WEISS (McDonnell Aircraft Co., Saint Louis, MO) Engineering with Computers (ISSN 0177-0667), vol. 4, no. 1-2, 1988, p. 11-17.
Copyright

Implementers of engineering data base management systems inherit a legacy of existing software and data that must be integrated into the new system with minimum disruption of ongoing activities. Some critical issues addressed here include changes in software engineering practices, impact on user training and procedures, and problems connected with traditional or parochial interests. The material covered describes some experiences in coping with these 'legacy factors' during the recent McDonnell Aircraft Company (MCAIR) integrated data base implementation. Author

A89-12177

DATA BASE SYSTEM CONSIDERATIONS IN ENGINEERING DESIGN

H. MINDLIN and S. H. SMITH (Battelle Columbus Laboratories, OH) Engineering with Computers (ISSN 0177-0667), vol. 4, no. 1-2, 1988, p. 19-26. refs
Copyright

Data requirements for a general structural design procedure, including general development and maintenance steps, are examined, and the objectives of a design/engineering data base are formulated. In particular, it is noted that the design process will generate analysis and testing data that must be incorporated into the data bases to assure timeliness and completeness needed for efficient design. Development of new, faster, and better computerized design/engineering methods will emphasize the requirements for these and other types of data bases and interfaces. V.L.

A89-12180* National Aeronautics and Space Administration, Goddard Space Flight Center, Greenbelt, MD.

THE INTEGRATED ANALYSIS CAPABILITY (IAC LEVEL 2.0)

HAROLD P. FRISCH (NASA, Goddard Space Flight Center, Greenbelt, MD) and ROBERT G. VOS (Boeing Aerospace Co., Seattle, WA) Engineering with Computers (ISSN 0177-0667), vol. 4, no. 1-2, 1988, p. 53-63. refs
Copyright

The critical data management issues involved in the development of the integral analysis capability (IAC), Level 2, to support the design analysis and performance evaluation of large space structures, are examined. In particular, attention is given to the advantages and disadvantages of the formalized data base; merging of the matrix and relational data concepts; data types, query operators, and data handling; sequential versus direct-access files, local versus global data access; programming languages and host machines; and data flow techniques. The discussion also covers system architecture, recent system level enhancements, executive/user interface capabilities, and technology applications. V.L.

A89-12181

AN INTEGRATED DATA BASE MANAGEMENT SYSTEM FOR ENGINEERING APPLICATIONS BASED ON AN EXTENDED RELATIONAL MODEL

J. S. ARORA and S. MUKHOPADHYAY (Iowa, University, Iowa City) Engineering with Computers (ISSN 0177-0667), vol. 4, no. 1-2, 1988, p. 65-73. refs
(Contract AF-AFOSR-82-0322)
Copyright

Some general research issues involved in the design and implementation of a new integrated data base management system (DBMS) are examined. A generalized relational model is introduced to handle large matrices and tables encountered in many engineering applications. The model forms the basis for the design of the new DBMS MIDAS/GR (Management of Information for Design and Analysis of Systems/Generalized Relational model) system. The system supports run-time data management as well as data sharing among software components. Some details of the design and performance of the system are discussed, as are results of some applications. V.L.

A89-26248

DEVELOPMENTS IN INTERDISCIPLINARY SIMULATION AND DESIGN SOFTWARE FOR MECHANICAL SYSTEMS

BERNHARD DOPKE (Iowa, University, Iowa City) Engineering with Computers (ISSN 0177-0667), vol. 4, no. 4, 1988, p. 229-238. Research supported by the University of Iowa. refs
Copyright

The current status of CAE software tools for mechanical design is surveyed, with a focus on methods for integrating structural analysis; kinematic, dynamic, and control simulation; service-life prediction; sensitivity analysis; and design optimization. The basic features of advanced CAE systems are discussed, including system executives, application-program integration, support utilities, user

interfaces, data-base systems, and computer environments, and nine currently available interdisciplinary program packages are briefly characterized. T.K.

A89-39600

INFORMATION CAPACITY OF ASSOCIATIVE MEMORIES

ANTHONY KUH (Hawaii, University, Honolulu) and BRADLEY W. DICKINSON (Princeton University, NJ) IEEE Transactions on Information Theory (ISSN 0018-9448), vol. 35, Jan. 1989, p. 59-68. Research supported by the Pacific International Center for High Technology Research. refs
(Contract N00014-83-K-0577; NSF ECS-84-05460; NSF MIP-87-10868)
Copyright

Associative memory networks consisting of highly interconnected binary-valued cells have been used to model neural networks. Tight asymptotic bounds have been found for the information capacity of these networks. The authors derive the asymptotic information capacity of these networks using results from normal approximation theory and theorems about exchangeable random variables. I.E.

A89-48162#

BUILDING MAINTAINABLE LARGE SCALE SOFTWARE SYSTEMS - THE MEASURABLE BENEFITS OF CASE TECHNOLOGY

MARK C. FILTEAU (BDM International, Inc., Dayton, OH) AIAA and NASA, Symposium on the Maintainability of Aerospace Systems, Anaheim, CA, July 26, 27, 1989, 8 p.
(AIAA PAPER 89-5051) Copyright

A major information systems manufacturer has been engaged for three years in an effort to apply commercially available computer-aided software engineering (CASE) tools to enhance productivity and reduce documentation errors. Attention is given to the most ambitious phase of this undertaking, in which over 180 software designers employed CASE, desktop publishing hardware, and automated product-management tools in the design and implementation of over four million lines of COBOL code. Test and maintenance statistics indicate a 50-percent reduction in error rates and a 70-percent improvement in product reliability. O.C.

A89-48764

THE SOFTWARE FACTORY: A FOURTH GENERATION SOFTWARE ENGINEERING ENVIRONMENT

MICHAEL W. EVANS (Expertware, Inc., Morgan Hill, CA) New York, Wiley-Interscience, 1989, 332 p. refs
Copyright

The software-development process and its management are examined in a text intended for engineering managers and students of computer science. A unified concept based on the principle that software design is an engineering science rather than an art is applied, and a software engineering environment (SEE) analogous to an industrial plant is proposed. Chapters are devoted to the classical software environment, the history of software engineering, the evolution of the SEE, the fourth-generation SEE, the engineering process, software data relationships, the SEE data base, data control in the SEE, software life cycles, information-system product assurance, business management and control, and automating and adapting the SEE. T.K.

N84-14067# Lawrence Livermore National Lab., CA. Technology Information System.

TIS: AN INTELLIGENT GATEWAY COMPUTER FOR INFORMATION AND MODELING NETWORKS. OVERVIEW

V. E. HAMPEL, C. BAILEY, R. A. KAWAIN, N. A. LANN, S. K. MCGROGAN, W. S. SCOTT, S. M. STAMMERS, and J. L. THOMAS Aug. 1983 10 p refs
(Contract W-7405-ENG-48)
(DE83-017986; UCRL-53439; AD-A135916) Avail: NTIS HC A02/MF A01

The Technology Information System (TIS) is being used to develop software for Intelligent Gateway Computers (IGC) suitable

for the prototyping of advanced, integrated information networks. Dedicated to information management, TIS leads the user to available information resources, on TIS or elsewhere, by means of a master directory and automated access procedures. Other geographically distributed information centers accessible through TIS include federal and commercial systems like DOE/RECON, NASA/RECON, DOD/DROLS, DOT/TIC, CIS, and DIALOG in the United States, the chemical information systems DARC in France, and DECHEMA in West Germany. New centers are added as required. DOE

N84-19163# Purdue Univ., West Lafayette, IN. Dept. of Electrical Engineering.

VLSI ARCHITECTURES FOR PATTERN ANALYSIS AND IMAGE DATABASE MANAGEMENT

K. HWANG /in University of Southern California Proc. of USC Workshop on VLSI and Mod. Signal Process. p 174-184 15 Nov. 1983 refs

Avail: NTIS HC A11/MF A02 CSCL 09/2

VLSI computing structures are introduced for the analysis and management of imagery data. It is argued that machine intelligence would be greatly enhanced if new generation of computers could be designed to process multidimensional imagery data above the string processing of alphanumeric information by present computers. Practical applications of computers include the processing of biomedical images for diagnosis, the recognition of characters, fingerprints, and moving objects, remote sensing, industrial inspection, robotic vision, military intelligence, and data compression for communications. Image analysis refers to the use of digital computers for Pattern Recognition and Image Processing (PRIP). On-line imagery data needs to be restored on disks and fastly retrieved for PRIP applications. A VLSI based image analysis machine should integrate both pattern analysis and image data base management capabilities into a unified system design. E.A.K.

N84-20840# Lister Hill National Center for Biomedical Communications, Bethesda, MD.

VIDEODISC PREMASTERING FACILITY: TECHNICAL EVALUATION Report, 1982 - 1983

G. THOMA, R. GRIER, S. MERRIAM, and W. LEONARD Sep. 1983 153 p refs
(PB84-135821; LHNBCB/TR-83-10) Avail: NTIS HC A08/MF A01 CSCL 14/2

It is widely recognized that the videodisc has the potential to improve productivity in areas such as information transfer and education. Apart from simply serving as a linear playback medium for home entertainment, the videodisc is finding applications as an interactive medium for information, instruction, and as a visual database. This report describes a facility developed to perform the premastering functions for a Level Two disc, the results of a technical evaluation of this facility, and the level-of-effort and costs associated with the development of the experimental interactive videodisc. Author (GRA)

N84-21426# Oak Ridge National Lab., TN. Computer Sciences OPEN SYSTEMS INTERCONNECTION FOR THE DEFENCE COMMUNITY

N. B. GOVE /in AGARD The Appl. of New Technol. to Improve the Delivery of Aerospace and Defence Inform. 5 p Dec. 1983 refs

Copyright Avail: NTIS HC A06/MF A01

The area of Open Systems Interconnection is a very active area. The concept of a layered approach to communication standards is generally accepted and the OSI Reference Model appears to be successful as a working approach toward integration of the many standards involved in open connection. The Reference Model is not in itself a communication standard but rather a framework for standards development. As such, it will permit evolution of standards as needed in a changing technology, while providing a coherent approach to the many problems involved in Open Systems interconnection. Author

N84-27453# Naval Postgraduate School, Monterey, CA.
THE IMPLEMENTATION OF A MULTI-BACKEND DATABASE SYSTEM (MDBS). PART 4: THE REVISED CONCURRENCY CONTROL AND DIRECTORY MANAGEMENT PROCESSES AND THE REVISED DEFINITIONS OF INTER-PROCESS AND INTER-COMPUTER MESSAGES

S. A. DEMURJIAN, D. K. HSIAO, D. S. KERR, and A. OROOJI
 Feb. 1984 30 p
 (AD-A140874; AD-E500637; NPS52-84-005) Avail. NTIS HC A03/MF A01 CSCL 09/2

The multi-backend database system (MDBS) uses one minicomputer as the master or controller, and a varying number of minicomputers and their disks as slaves or backends. MDBS is primarily designed to provide for database growth and performance enhancement by the addition of identical backends. No special hardware is required. The backends are configured in a parallel manner. A new backend may be added by replicating the existing software on the new backend. No new programming or reprogramming is required. A prototype MDBS is being completed in order to carry out the design verification and performance evaluation. This report is the fourth in a series which describes the MDBS implementation. The processes in the MDBS controller (request preparation, insert information generation and post processing) and the processes in the MDBS backends (directory management, record processing and concurrency control) have been described in the previous reports. The concurrency control process, formerly used to control access to just user data, is modified to control access to directory data as well. The directory management process is also modified to improve the execution of update requests. Finally, a directory management is modified for the storage of directory data on the secondary storage. Next, the report describes the revised definitions of inter-process messages (messages between processes within a minicomputer) and intercomputer messages (messages between processes in different minicomputers). Finally, we conclude this series of reports dealing with the implementation of MDBS. GRA

N84-27602# Price Waterhouse and Co., Washington, DC. Office of Government Services.

REPORT ON U.S. DOMESTIC AND INTERNATIONAL TELECOMMUNICATIONS AND INFORMATION MARKETS Final Report

Feb. 1984 204 p refs Sponsored by NTIA
 (PB84-166362) Avail. NTIS HC A10/MF A02 CSCL 05/3

Contents: the U.S. telecommunications equipment market, 1970-82, the data processing equipment market, 1970-82, U.S. licensing and regulation of exports and imports of telecommunications and information equipment, U.S. Government procurement policies for telecommunications and information equipment; market for U.S. firms in telecommunications services, U.S. information services industry, 1970-82, new telecommunications and information services currently available or under development, identification of the market for remote sensing by satellites, selected users of and benefits from telecommunications and information services. GRA

N84-33063# Air Command and Staff Coll., Maxwell AFB, AL.
IBM'S TOKEN-RING LAN (LOCAL-AREA NETWORK): A BASE-LEVEL COMMUNICATIONS SOLUTION Student Report
 J. D. WELLS Apr 1984 42 p
 (AD-A143446, ACSC-84-2765) Avail. NTIS HC A03/MF A01 CSCL 09/2

This document reviews the computer revolution and information explosion within the Air Force and their part in increased data communications requirements. It investigates the local-area network topologies for capabilities and characteristics that are advantageous in a CONUS, non-secure, base-level configuration. Focused upon are the bus and ring topologies. Then a closer examination is made of a hybrid star-ring local area network (LAN) utilizing a token-access control mechanism. This LAN, as proposed by IBM, is seen to have superior maintainability, reliability, and flexibility. Author (GRA)

N84-34316# Air Command and Staff Coll., Maxwell AFB, AL.
MANAGING MICROCOMPUTERS: A SURVIVAL KIT FOR FUNCTIONAL MANAGERS

E. C. IVERSTINE Apr. 1984 20 p
 (AD-A144006; AD-E751074, ACSC-84-1345) Avail. NTIS HC A03/MF A01 CSCL 05/1

Military and civilian use of microcomputers has expanded at a phenomenal rate. Their popularity stems from the fact that they put computational power in the hands of users. But this capability presents new challenges to functional managers in the military community because they now must manage their computational tools (microcomputers) as well as their work units. This article defines the microcomputer management environment facing functional managers and outlines some principles for meeting this challenge. Author (GRA)

N84-34326# Naval Postgraduate School, Monterey, CA
THE CREATION OF A CENTRAL DATABASE ON A MICROCOMPUTER NETWORK M.S. Thesis

J. G. BOYNTON and R. G. NICHOLS Mar. 1984 219 p
 (AD-A143875) Avail. NTIS HC A10/MF A02 CSCL 09/2

This thesis discusses the design and development of a central database on a network of microcomputers. It provides an overview of the methodology utilized in creating the system, along with the problems associated with a central database. The thesis includes the source listings for the creation of the system and a discussion of the difficulties of controlling contention within the networked database environment. Author (GRA)

N84-34381*# National Aeronautics and Space Administration, Washington, DC.

NETWORKING

In its Planetary Data Workshop, Pt. 2 p. 189-214 Oct. 1984
 Avail. NTIS HC A07/MF A01 CSCL 03/2

Data exchange and communication between users, between nodes, and between users and nodes within the Planetary Data System are discussed. Data transport costs, methods, and protocol are reviewed. R.S.F.

N85-12777# Office of Management and Budget, Washington, DC.

FIVE-YEAR PLAN FOR MEETING THE AUTOMATIC DATA PROCESSING AND TELECOMMUNICATIONS NEEDS OF THE FEDERAL GOVERNMENT. VOLUME 1: PLANNING STRATEGIES Final Report

May 1984 83 p Prepared in cooperation with GSA, Washington, D.C., and Commerce Dept., Washington, D.C. 2 Vol.
 (PB84-214501) Avail. NTIS HC A05/MF A01 CSCL 05/1

The first volume, A Five-Year Plan for Meeting the Automatic Data Processing and Telecommunications Needs of the Federal Government. Planning Strategies, describes the planning process and examines the planning effort of several typical agencies. It also provides a survey of the current state of planning among the cabinet agencies and explores some of the issues involved in managing the evolution of the new technology. GRA

N85-12778# Office of Management and Budget, Washington, DC.

FIVE-YEAR PLAN FOR MEETING THE AUTOMATIC DATA PROCESSING AND TELECOMMUNICATIONS NEEDS OF THE FEDERAL GOVERNMENT. VOLUME 2: MAJOR INFORMATION TECHNOLOGY SYSTEMS ACQUISITION PLANS OF FEDERAL EXECUTIVE AGENCIES, 1984-1989 Final Report

May 1984 360 p Prepared in cooperation with GSA, Washington, D.C., and Commerce Dept., Washington, D.C. 2 Vol.
 (PB84-214519) Avail. NTIS HC A17/MF A02 CSCL 05/1

This is the second of two volumes. Volume 2 contains the information technology acquisition plans of the Federal Government, broken out by agency and component. Volume 2 is arranged into three major sections. Section 1 contains an analysis of major information technology acquisitions by Federal executive

COMPUTERS, TELECOMMUNICATIONS, AND NETWORKS

agencies. Section 2 is the compilation of planned executive agency information technology procurement obtained from the 1985 Federal budget. Section 3 is an agency index GRA

N85-16481# Naval Postgraduate School, Monterey, CA
FUTURE DATABASE MACHINE ARCHITECTURES
D. K. Hsiao Sep. 1984 14 p
(AD-A146786, NPS52-84-014) Avail NTIS HC A03/MF A01
CSCL 09/2

There are many software database management systems available on many general-purpose computers ranging from micros to super-mainframes. Database machines as backend computers can offload the database management work from the mainframe so that we can retain the same mainframe longer. However, the database backend must also demonstrate lower cost, higher performance, and newer functionality. Some of the fundamental architecture issues in the design of high-performance and great-capacity database machines are addressed. Solutions towards resolving these design issues are articulated. This article is written for the New York University's Symposium in New Directions of Database Systems on the basis of a lecture given at Microelectronic and Computer Technology, Inc. (MCC) GRA

N85-24198*# National Aeronautics and Space Administration
Marshall Space Flight Center, Huntsville, AL
INTRODUCTION TO THE SPACE PHYSICS ANALYSIS NETWORK (SPAN)
J. L. GREEN, ed. and D. J. PETERS, ed. (Alabama Univ., Huntsville) Apr. 1985 38 p, refs
(NASA-TM-86499; NAS 115 86499) Avail NTIS HC A03/MF A01 CSCL 17/2

The Space Physics Analysis Network or SPAN is emerging as a viable method for solving an immediate communication problem for the space scientist. SPAN provides low-rate communication capability with co-investigators and colleagues, and access to spare science databases and computational facilities. The SPAN utilizes up-to-date hardware and software for computer-to-computer communications allowing binary file transfer and remote log-on capability to over 25 nationwide space science computer systems. SPAN is not discipline or mission dependent with participation from scientists in such fields as magnetospheric, ionospheric, planetary, and solar physics. Basic information on the network and its use are provided. It is anticipated that SPAN will grow rapidly over the next few years, not only from the standpoint of more network nodes, but as scientists become more proficient in the use of telepresence, more capability will be needed to satisfy the demands Author

N85-26170# Air Force Inst. of Tech., Wright-Patterson AFB, OH. School of Engineering.
DEVELOPMENT OF A USER SUPPORT PACKAGE FOR CPESIM 2 (A COMPUTER SIMULATION FOR CPE (COMPUTER PERFORMANCE EVALUATION) USE M.S. Thesis
D. L. PETTY Dec. 1984 159 p
(AD-A151899, AFIT/GCS/ENG/84D-21) Avail NTIS HC A08/MF A01 CSCL 09/2

In 1983 a SLAM computer simulation was developed to be used as an educational tool in computer performance evaluation (CPE) and Queueing Theory classes at AFIT. Lack of user friendliness and additional requirements necessitated the development of a user friendly interface, i.e. this thesis effort. The interface consists of two programs: one for the instructor and one for his students. The students' interface allows them to modify and display the initial or subsequently modified computer configurations and to do a data reduction and histogram analysis on output software monitor data after a simulation run. Any student configuration changes are stored in an Ingres database. The instructor's interface allows him to easily create initial configuration, the catalog of available hardware, and the system's workload of one to ten jobstreams. He can also display any or all configurations of any or all student teams on his terminal or direct that display to a file for later printing. The interface as a whole is menu-driven, user friendly, and very portable; it operates on any UNIX system

(which has Ingres and SLAM) regardless of the hardware (including terminals) that the operating system is implemented on. A student and instructor user's manual is provided GRA

N85-26173# National Bureau of Standards, Washington, DC.
FUTURE INFORMATION TECHNOLOGY, 1984 TELECOMMUNICATIONS Final Report
P. KAY and P. POWELL Dec. 1984 343 p refs Prepared in cooperation with Little (Arthur D.), Inc., Aurora Associates, Inc., Titan Systems, Inc. and International Data Corp (PB85-165850, NBS/SP-500/119, LC-84-601149) Avail NTIS HC A15/MF A02, also available SOD HC \$9.50 as SN003-003-02626-3 CSCL 09/2

Telecommunications technology and related areas in computer organization are discussed. Four primary concerns are mentioned: the telecommunications forecast, through 1999, three perspectives on the divestiture of AT&T, a discussion of the general impacts of technology on computer security, and the management implications of the trends in information technology. Additionally, the summary of an industry workshop on this forecast, a brief update of the 1983 forecast, and a glossary of terms are presented GRA

N85-27106*# Jet Propulsion Lab., California Inst of Tech., Pasadena
NETWORK INFORMATION MANAGEMENT SUBSYSTEM
C. C. CHATBURN *In its* The Telecommun Data Acquisition Rept p 109-115 15 May 1985 refs
Avail NTIS HC A08/MF A01 CSCL 05/1

The Deep Space Network is implementing a distributed data base management system in which the data are shared among several applications and the host machines are not totally dedicated to a particular application. Since the data and resources are to be shared, the equipment must be operated carefully so that the resources are shared equitably. The current status of the project is discussed and policies, rules, and guidelines are recommended for the organizations involved in the project Author

N85-27572# Lawrence Livermore National Lab., CA. Technical Information System.
INTERNATIONAL INFORMATION NETWORKS FOR MATERIAL PROPERTIES: REVISION 1
V. E. HAMPEL, C. A. GAYNOR, B. E. HEGEMANN, R. D. SANNER, and Y. WOLMAN (Hebrew Univ of Jerusalem) Jun. 1984 55 p refs Presented at the 9th Intern CODATA Conf., Jerusalem 24-28 Jun. 1984
(Contract W-7405-ENG-48)
(DE85-007412; UCRL-90941-REV-1, CONF-8406139-9-REV-1)
Avail NTIS HC A04/MF A01

Available S and T resources from three continents were demonstrated. Interactive retrievals of physical and chemical data derived from seven online information systems were renewed and corresponding explanations were measured for: CAS ONLINE and NBS/OSRD in the US, CRYSTMET and F*A*C*T in Canada, DARC in France, DECHEMA in West Germany, and FMDB in Japan. This audio-visual demonstration was carried out over international packet-switching networks and regular telephone voice communications. The machine-aided translation of a sample of its French text into English from Los Angeles, was demonstrated within the hour. DOE

N85-27762# National Bureau of Standards, Gaithersburg, MD
Inst. for Computer Sciences and Technology
FUTURE INFORMATION TECHNOLOGY, 1984: TELECOMMUNICATIONS
P. KAY, ed. and P. POWELL, ed. Dec 1984 334 p refs Sponsored in part by IRS and Office of the Secretary of Defense Prepared in cooperation with Little (Arthur D.) Inc., Aurora Associates, Inc., Titan Systems, Inc., and International Data Corp (NBS/SP-500/119, T185-901186, LC-84-601149) Avail NTIS HC A15/MF A02

Telecommunications technology and related areas in computer organizations are considered. Topics covered includes: the

telecommunications forecast through 1999, three perspectives on the divestiture of AT&T, a general impacts of technology on computer security, and the management implications of the trends in information technology. An industry workshop on this forecast is summarized and the 1983 forecast is updated. A glossary of terms is included. A.R.H.

N86-15209* National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.

GUIDELINES FOR SUBMITTING DATA TO THE NATIONAL SPACE SCIENCE DATA CENTER

Jul. 1984 7 p

(NASA-TM-87500, NSSDC/WDC-A-RS-84-19, NAS 1.15.87500)

Avail: NTIS HC A02/MF A01 CSCL 05/2

The mission of the National Space Science Data Center (NSSDC) is to disseminate space science data for further analysis beyond that provided by the principal investigators (PIs) or team leaders (TLs) and their coworkers. Consequently, the NSSDC is responsible for the acquisition, organization, storage, retrieval, announcement, and distribution of scientific data obtained mainly from satellites and spacecraft. Any scientist may acquire data from the NSSDC and use them in further studies, either alone or in conjunction with data from ground-based or spacecraft experiments. With the responsibility for archiving data is the concomitant responsibility for distributing the documentation necessary to make those data usable. Since the group most knowledgeable about a particular experiment and its data is the PI or TL and his coworkers, and since the NSSDC cannot possibly supply the qualified personnel needed to write this documentation comprehensively, it is the responsibility of the PI or TL to provide the essential documentation. The NSSDC will support this effort by defining what is needed, by reviewing what is provided, and by reproducing and distributing the resulting documentation with the data. For a high-use data set, the NSSDC may publish the documentation as a Data Users Note, for a low-use data set, the NSSDC may distribute a Xerox, microfilm, or microfiche copy of the documentation. Author

**N86-16159# Los Alamos National Lab., NM
LOGICAL AND PHYSICAL DATABASE DESIGN WITH A
FULL-TEXT ENVIRONMENT**

C. D. MICHELSEN and D. F. SHAFER 1985 11 p Presented at the 2nd IEEE International Conference on Data Engineering, Los Angeles, California, 4 Feb 1985

(Contract W-7405-ENG-36)

(DE 85-015683; LA-UR-85-2329, CONF-850295-1) Avail: NTIS HC A03/MF A01

This paper describes the problems and solutions encountered in the design of logical and physical data bases within a full-text environment. A full-text environment can be defined as data bases that store both citation information as well as actual document text. The problems/solutions encountered were a result of the necessity to integrate distinct physical data bases into a single logical data base without the assistance of a data base management system that is capable of physical data base integration. DOE

N86-20473* McDonnell-Douglas Astronautics Co., Huntington Beach, CA

SPACE STATION DATA SYSTEM ANALYSIS/ARCHITECTURE STUDY. TASK 1: FUNCTIONAL REQUIREMENTS DEFINITION, DR-5

Dec. 1985 308 p refs

(Contract NAS5-28082)

(NASA-CR-177838, NAS 1.26.177838, MDC-H1343A-REV) Avail: NTIS HC A14/MF A02 CSCL 22/2

The initial task in the Space Station Data System (SSDS) Analysis/Architecture Study is the definition of the functional and key performance requirements for the SSDS. The SSDS is the set of hardware and software, both on the ground and in space, that provides the basic data management services for Space Station customers and systems. The primary purpose of the requirements development activity was to provide a coordinated,

documented requirements set as a basis for the system definition of the SSDS and for other subsequent study activities. These requirements should also prove useful to other Space Station activities in that they provide an indication of the scope of the information services and systems that will be needed in the Space Station program. The major results of the requirements development task are as follows: (1) identification of a conceptual topology and architecture for the end-to-end Space Station Information Systems (SSIS); (2) development of a complete set of functional requirements and design drivers for the SSIS; (3) development of functional requirements and key performance requirements for the Space Station Data System (SSDS); and (4) definition of an operating concept for the SSIS. The operating concept was developed both from a Space Station payload customer and operator perspective in order to allow a requirements practicality assessment. M.G.

N86-25133# Air Force Inst of Tech., Wright-Patterson AFB, OH. School of Engineering.

CONTENT-ADDRESSABLE MEMORY MANAGER: DESIGN AND EVALUATION M.S. Thesis

M. C. ROWE Dec. 1985 355 p refs

(AD-A164037; AFIT/GE/ENG/85D-36) Avail: NTIS HC A16/MF A02 CSCL 09/2

This research covers basic issues in implementing a Content-Addressable Memory (CAM) for a microcomputer. The thesis compares the various types of CAM organizations and presents a set of standards to distinguish true CAM from CAM-like memory. Issues such as the meaning of content to the host computer are discussed. This discussion leads to the implementation issues of how the CAM should operate with the host computer. The two configurations addressed in detail, a completely integrated approach and a peripheral approach. The thesis does not address the associative processor configurations found in PEPE, STARAN, or MPP. The case is presented that the peripheral device approach is the most practical approach. The peripheral device, CAM board, using the AFIT CAM IC chips, will be controlled from a dedicated device that is designed and evaluated in this thesis. The architecture and operation of the CAM IC chip controller (CAM Manager) is derived from the desire to have a general purpose device that will have a small instruction set. The instructions will allow for efficient operations on applications as diverse as LISP garbage collection, database searching, and array arithmetic. This thesis compares a conventional computer executing the test applications and the same computer using the CAM board. The test applications were: (1) addition over all elements of an array, (2) LISP garbage collection, and (3) image recognition. The CAM board can enhance the performance of the host microcomputer. GRA

N86-25687# RAND Corp., Santa Monica, CA
**TELECOMMUNICATIONS ALTERNATIVES FOR FEDERAL
USERS: MARKET TRENDS AND DECISIONMAKING CRITERIA**

L. L. JOHNSON, M. A. SIRBU, and B. M. MITCHELL Dec 1985 237 p refs Sponsored by NSF

(Contract NSF PRA-84-00689)

(PB86-153764, R-3355-NSF, ISBN-0-8330-0692-4,

NSF/PRA-85023) Avail: NTIS HC A11/MF A02 CSCL 17/2

The telecommunications market has been marked by growing competition in local and long distance transmission and in terminal equipment. In response to this, the goal of the study is to show what kinds of information government agencies should collect, and how they should use it, to improve decision making. The study considers four objectives: (1) to identify and assess options for meeting voice and data needs, taking into account technical, economic, and regulatory constraints; (2) to show how Federal agencies can evaluate their needs in light of the options for supplying them; (3) to establish criteria for evaluating the relative merits of options in light of these needs; and (4) to construct a decision making framework for choosing among options, taking into account uncertainties about costs, performance, and benefits. Author (GRA)

N86-26924# Naval Postgraduate School, Monterey, CA.
**MODERN HARDWARE TECHNOLOGIES AND SOFTWARE
 TECHNIQUES FOR ON-LINE DATABASE STORAGE AND
 ACCESS M.S. Thesis**

U. V. FEUDO Dec. 1985 297 p refs
 (AD-A164993) Avail: NTIS HC A13/MF A02 CSCL 09/2

Computerized data processing applications have grown over the past thirty years to a point where they have now become a pervasive influence in our society. As the range of applications has grown, a continuing concern has been the cost and access time of data storage. A wide range of technologies have been investigated to address this problem. The purpose of this thesis is to examine high volume, on-line storage media of current and emerging technologies and software techniques for supporting these on-line, high capacity storage media. In the first part, we analyze such media as vertical magnetic recording, thin film media, optical data disks, magneto-optic disks, bubble and Bernoulli-effect disks. Then, comparisons and evaluations of products and product categories are illustrated. In the second part, we review the modern software techniques for on-line database storage and access.

Author (GRA)

N86-29285*# National Aeronautics and Space Administration
 Goddard Space Flight Center, Greenbelt, MD

DATA SET MANAGEMENT

M. REPH *In its Proceedings of the Second Pilot Climate Data System Workshop* 17 p 1986

Avail: NTIS HC A12/MF A02 CSCL 04/2

The data sets currently supported by the Pilot Climate Data System (PCDS) are listed, many of which are Level II and Level III Nimbus-7 data sets. Those data sets planned for future access through the PCDS were also listed, and their current installation status was stated. The tasks involved in supporting data sets within the PCDS were identified and described. After a data set is approved for implementation into the system and communication with the data producers is established, the information for the detailed catalog entry is gathered. This information then is reviewed with the scientists involved before producing a catalog summary. Once this is done, the catalog information can be provided to users, even before the data set is installed. The next several tasks involve software development and can prove to be the most time-consuming aspect in the data set support. These tasks can be simplified if the data producers provide complete and accurate documentation of their product. Software for reading and interpreting the data sets is developed and the data sets, or portions thereof, that will be made available for use within the PCDS are inventoried. Users can access this information via the INVENTORY Subsystem of the PCDS.

Author

N86-29297*# National Aeronautics and Space Administration
 Goddard Space Flight Center, Greenbelt, MD

**NETWORK ACCESS TO PCDS (SPAN, ESN, SESNET,
 ARPANET)**

J. GREEN *In its Proceedings of the Second Pilot Climate Data System Workshop* 29 p 1986

Avail: NTIS HC A12/MF A02 CSCL 04/2

One of the major goals of the National Space Science Data Center is to increase access to NASA data systems by enhancing networking activities. The activities are centered around three basic networking systems: the Space Physics Analysis Network (SPAN), the Earth Science Network (ESN); and the NASA Packet Switched System (NPSS). Each system is described, linkages among systems are explained, and future plans are announced. The inclusion of several new climate nodes on SPAN or ESN are also mentioned. Presently, the Pilot Climate Data System is accessible through SPAN and will be accessible through NPSS by summer and ESN by the end of 1986. Ambitious plans for implementation are underway. The implementation of these plans will represent a major advance in the utilization and accessibility of data worldwide.

Author

N86-29298*# National Aeronautics and Space Administration
 Goddard Space Flight Center, Greenbelt, MD.

METHODS OF DOWNLOADING TO USER INSTITUTIONS

L. TREINISH *In its Proceedings of the Second Pilot Climate Data System Workshop* 10 p 1986

Avail: NTIS HC A12/MF A02 CSCL 04/2

The Pilot Climate Data System (PCDS) not only supports the ability to output data in a uniform structure via the Common Data Format (CDF), but also supports the ability to provide data in native format for any data set supported by the PCDS. Methods are discussed for acquiring data in either format from the PCDS for further work at remote sites. Four levels of remote utilization are defined, based on the extent of offloading the National Space Science Data Center (NSSDC) computer and local PCDS processing. Characteristics of each level are thoroughly explained, including details of information and data transfers, downloading, uploading, and offloading of the NSSDC computer. Only the levels themselves are specified here. The first level defined is that of a network-based distributed PCDS. A subset of the PCDS software is ported to another VAX and made available on a network (i.e., SPAN) node. There is no subset of the PCDS at the second level, but it is also network based. Non-network utilization of the PCDS, requiring dial-up log on, is denoted as a third level. Finally, at the fourth level, personal computer utilization of the PCDS through dial-up log on with proper terminal emulation is defined.

Author

N86-33208*# National Aeronautics and Space Administration,
 Washington, DC.

PROTOTYPE MATERIAL PROPERTIES DATA NETWORK

C. J. M. NORTHRUP, JR. (Sandia National Labs., Albuquerque, N. Mex.), J. L. MCCARTHY (California Univ., Berkeley, Lawrence Berkeley Lab.), J. H. WESTBROOK (Sci-Tech Knowledge Systems, Scotia, N.Y.), and W. GRATTIDGE 1986 10 p Presented at the ASME Pressure Vessel and Piping Conference and Exhibit, Chicago, Ill., 20 Jul. 1986 Sponsored by NASA

(Contract DE-AC04-76DP-00789)

(NASA-TM-89243; NAS 1.15:89243; DE86-007821,

SAND-86-0499C; CONF-860722-7) Avail: NTIS HC A02/MF A01 CSCL 05/2

The Scientific Information Research Program (SIRP) is a cooperative program initiated by the National Bureau of Standards and the Department of Energy to develop a prototype, computerized information network. Subsequent support has been provided by the National Aeronautics and Space Administration and the Department of Defense. A group of engineers and scientists were selected from Lawrence Livermore National Laboratory, Los Alamos National Laboratory and Sandia National Laboratories to form an initial user group and provide guidance in the development of the system. After an intensive analysis, it was determined that the information the Group used most frequently was the physical properties of metal alloys. This data is the focus for the database system, Materials Information for Science and Technology (MIST), being developed for the network.

DOE

N87-16381*# Science Applications International Corp.,
 Washington, DC

EARTH AND ENVIRONMENTAL SCIENCE IN THE 1980'S:

**PART 1: ENVIRONMENTAL DATA SYSTEMS,
 SUPERCOMPUTER FACILITIES AND NETWORKS**

Washington NASA Oct. 1986 431 p

(Contract NASW-3622; NASW-4092; SAIC PROJ

1-224-03-340-28)

(NASA-CR-4029, NAS 1 264029) Avail: NTIS HC A19/MF A03 CSCL 08/5

Overview descriptions of on-line environmental data systems, supercomputer facilities, and networks are presented. Each description addresses the concepts of content, capability, and user access relevant to the point of view of potential utilization by the Earth and environmental science community. The information on similar systems or facilities is presented in parallel fashion to encourage and facilitate intercomparison. In addition, summary

sheets are given for each description, and a summary table precedes each section. Author

N87-16658# Defense Technical Information Center, Alexandria, VA. Office of Information Systems and Technology.
THE DOD GATEWAY INFORMATION SYSTEM DIRECTORY OF RESOURCES Final Report
CAROL E. JACOBSON and GLADYS A. COTTER Aug 1986 15 p
(AD-A174154, DTIC/TR-86/8) Avail. NTIS HC A03/MF A01 CSCL 05/2

The Defense Technical Information Center (DTIC) is sponsoring development of a DoD Gateway Information System (DGIS) to provide online, streamlined methods for identifying, accessing, searching and analyzing data from heterogeneous databases of interest to the DOD community. At the core of the gateway system is a Directory of Resources which contains information on the content, scope and availability of selected databases. Presently, the Directory references over 430 DOD-sponsored R&D databases, but this figure is expected to grow to over 3,000 when coverage is expanded to include additional DOD, other federal, and commercial databases. The prototype Directory runs on a VAX 11/780 minicomputer using the INGRES database management system and is available to a select community of users for test and evaluation. A critical feature is the menu-driven interface designed to assist end-users. This paper describes data collection, database design, implementation of the Directory and menu-driven interface, and future directions. GRA

N87-18282# Brookhaven National Lab., Upton, NY.
ACQUISITION, USE AND ARCHIVING OF REAL-TIME DATA
M. J. LEACH, H. J. BERNSTEIN, J. L. TICHLER, R. J. MORAN, L. L. LAWRENCE, D. W. NIEBUHR, and P. A. KESSLER 1986 4 p Presented at the 10th International CODATA Conference, Ottawa, Canada, 14 Jul 1986
(Contract DE-AC02-76CH-00016)
(DE86-014769, BNL-38433; CONF-860762-1) Avail: NTIS HC A01/MF A01

Meteorological information is needed by scientific personnel at Brookhaven National Laboratory (BNL) for various purposes. An automated system, used to acquire, archive, and provide users with weather data, is described. Hardware, software, and some of the examples of the uses of the system are detailed. DOE

N87-19981# Lawrence Livermore National Lab., CA.
INTEGRATION OF COMMUNICATIONS WITH THE INTELLIGENT GATEWAY PROCESSOR
V. E. HAMPEL 1986 19 p Presented at the Seminar on Integrated Power Plant Computer Communications, San Francisco, Calif., 25 Aug. 1986
(Contract W-7405-ENG-48)
(DE87-002386; UCRL-95277, CONF-8608110-2) Avail: NTIS MF A01

The Intelligent Gateway Processor (IGP) software is being used to interconnect users equipped with different personal computers and ASCII terminals to mainframe machines of different make. This integration is made possible by the IGP's unique user interface and networking software. Prototype systems of the table-driven, interpreter-based IGP have been adapted to very different programmatic requirements and have demonstrated substantial increases in end-user productivity. Procedures previously requiring days can now be carried out in minutes. The IGP software has been under development by the Technology Information Systems (TIS) program at Lawrence Livermore National Laboratory (LLNL) since 1975 and is in use by several federal agencies since 1983. The Air Force is prototyping applications which range from automated identification of spare parts for aircraft to office automation and the controlled storage and distribution of technical orders and engineering drawings. Other applications of the IGP are the Information Management System (IMS) for aviation statistics in the Federal Aviation Administration (FAA), the Nuclear Criticality Information System (NCIS) and a nationwide Cost Estimating System (CES) in DOE, the library automation network of the

Defense Technical Information Center (DTIC), and the modernization program in the Office of the Secretary of Defense (OSD) DOE

N87-20772# Argonne National Lab., IL. Computing Services.
GUIDE TO SHARING PERSONAL COMPUTER RESOURCES VIA LOCAL AREA NETWORKS, REVISED

L. WINKLER Aug. 1986 70 p
(Contract W-31-109-ENG-38)
(DE86-016088, ANL/TM-438-REV) Avail. NTIS HC A04/MF A01

This Guide is for professional staff who commonly need computing tools on personal computers, minicomputers, mainframe computers, and supercomputers. It provides information and recommendations about personal computer local area networks in the context of the larger scheme of computing tools and services at the Laboratory. The material presented here is for the person considering installation of a personal computer local area network. Chapter 1 introduces the reader to the concept of personal computer local area networks and provides background material on networking. Chapter 2 summarizes Computing Services' evaluation of personal computer local area networking in general terms. Chapter 3 describes the technical and functional details of Computing Services' Personal Computer Local Area Network Evaluation and Demonstration Project. Chapters 4 and 5 are for individuals who are familiar with personal computing and who will be responsible for establishing a local area network. Chapter 4 covers technical issues relating to the prototype network installation in Building 221. Chapter 5 warns potential users what to expect when establishing a local area network. DOE

N87-24116# California Univ., Berkeley. Lawrence Berkeley Lab.

THE FUTURE OF INTERSITE NETWORKING

Nov. 1986 361 p Presented at the 1st Annual Energy Research Workshop on Interlaboratory Computing, Berkeley, Calif., 27 Oct. 1986

(Contract DE-AC03-76SF-00098)
(DE87-007912, LBL-22460, CONF-8610138) Avail. NTIS HC A16

Copies of viewgraphs and summaries of three discussion groups are presented. The purpose of the workshop was to identify strategies for meeting the computer networking needs of the scientists under the Office of Energy Research. DOE

N88-11925*# National Aeronautics and Space Administration
Lewis Research Center, Cleveland, OH
LEWIS INFORMATION NETWORK (LINK): BACKGROUND AND OVERVIEW

ROGER R. SCHULTE Nov 1987 34 p
(NASA-TM-100162; E-3724; NAS 1 15 100162) Avail. NTIS HC A03/MF A01 CSCL 17/2

The NASA Lewis Research Center supports many research facilities with many isolated buildings, including wind tunnels, test cells, and research laboratories. These facilities are all located on a 350 acre campus adjacent to the Cleveland Hopkins Airport. The function of NASA-Lewis is to do basic and applied research in all areas of aeronautics, fluid mechanics, materials and structures, space propulsion, and energy systems. These functions require a great variety of remote high speed, high volume data communications for computing and interactive graphic capabilities. In addition, new requirements for local distribution of intercenter video teleconferencing and data communications via satellite have developed. To address these and future communications requirements for the next 15 yrs, a project team was organized to design and implement a new high speed communication system that would handle both data and video information in a common lab-wide Local Area Network. The project team selected cable television broadband coaxial cable technology as the communications medium and first installation of in-ground cable began in the summer of 1980. The Lewis Information Network (LINK) became operational in August 1982 and has become the backbone of all data communications and video. Author

N88-15729# Colorado Univ., Boulder Dept. of Computer Science.

SELF-ADAPTIVE DATA BASES: Annual Report, Sep. 1986 - Sep. 1987

ROGER KING 21 Sep. 1987 3 p

(Contract N00014-86-K-0054)

(AD-A186414; AD-E900710, CU-CS-153-7622) Avail NTIS HC A01/MF A01 CSCL 05/2

Over the past year, significant progress has been made, including the completion of a prototype database management system, and the publication of several papers. The central contribution of this system, called Cactis, is that it is the first database system to introduce elegant and efficient means for managing derived data. The goal of Cactis is to provide this support within the context of a self-adaptive database implementation. The project has also spawned a number of related efforts. The DBMS is being tested with a complex application, one that is of significant interest to the current research community - software environment technology. Other progress includes the development of a graphical interface to Cactis, one that maintains the philosophy of self-adaptiveness, by allowing the interface to adapt to the needs of a particular user. As an effort independent of Cactis, a system called Moby is under development. It is being coded in lisp, and is an experiment in extending database technology to include the one sort of derived data that Cactis cannot maintain - rule-based data. A final effort this year has been directed toward the support of complex constraints in the Cactis system. As many constraints may be represented as derived data, Cactis is a natural medium for this experimentation. This project is in cooperation with the Naval Ocean Systems Center in San Diego. GRA

N88-21448# National Bureau of Standards, Gaithersburg, MD
TOWARDS A TRIBOLOGY INFORMATION SYSTEM: THE RESULTS OF A PLANNING WORKSHOP HELD AT THE NATIONAL BUREAU OF STANDARDS, JULY-AUGUST 1985
Final Report

J RUMBLE and L SIBLEY Dec 1987 130 p Sponsored by DOE, Washington, D C and American Society of Mechanical Engineering, New York, N Y
(PB88-168604, NBS/SP-737, LC 87-619902) Avail NTIS HC A07/MF A01, also available SOD HC \$6 50 as SN003-003-2843-6 CSCL 20/3

A workshop was held in July 1985 to address the needs for a computerized tribology information and data system, as well as possible implementation schemes. Specific categories that were treated were design, numeric data, bibliography, research in progress, newsletter, and product directory. The workshop recommendations detailed four phases of development, starting with a demonstration prototype system and concluding with a full-scale operating data and information base. Specific plans in each phase and for each subject area were developed and are presented. While continual input will be sought from the technical community to refine those plans, it is hoped that immediate efforts can begin in at least some of the areas, and that system use will quickly develop to a significant level, both nationally and internationally. GRA

N88-21697*# National Aeronautics and Space Administration
Lewis Research Center, Cleveland, OH

LABORATORY INFORMATION MANAGEMENT SYSTEM (LIMS): A CASE STUDY

KAREN S CRANDALL, JUDITH V AUPING, and ROBERT G MEGARGLE (Cleveland State Univ., Ohio) 1987 18 p
Presented at the 1st International Laboratory Information Management Systems Meeting, Pittsburgh, Pa., 23-25 Jan 1987
(NASA-TM-100835, E-4024, NAS 15 100835) Avail NTIS HC A03/MF A01 CSCL 09/2

In the late 70's, a refurbishment of the analytical laboratories serving the Materials Division at NASA Lewis Research Center was undertaken. As part of the modernization efforts, a Laboratory Information Management System (LIMS) was to be included. Preliminary studies indicated a custom-designed system as the best choice in order to satisfy all of the requirements. A scaled

down version of the original design has been in operation since 1984. The LIMS, a combination of computer hardware, provides the chemical characterization laboratory with an information data base, a report generator, a user interface, and networking capabilities. This paper is an account of the processes involved in designing and implementing that LIMS. Author

N88-24838# North Carolina Univ., Chapel Hill Dept. of Statistics

INFORMATION AND STOCHASTIC SYSTEMS Final Report, 1 Dec. 1986 - 30 Nov. 1987

CHARLES R BAKER 30 Nov 1987 6 p

(Contract AF AFOSR-0106-87)

(AD-A192167, AFOSR-88-0051TR) Avail NTIS HC A02/MF A01 CSCL 25/2

Equipment was purchased to support research in two main areas: communication channels with memory and signal detection and classification problems involving non-Gaussian stochastic processes. The research on communication channels involves largely the study of channel capacity under various assumptions and constraints. The research in signal detection and classification includes modeling, data analysis, and the development and evaluation of detection algorithms. GRA

N88-26863# SRI International Corp., Menlo Park, CA.

AN EVALUATION METHODOLOGY FOR DEPENDABLE MULTIPROCESSORS Final Technical Report, Jul. - Sep. 1987

JACK GOLDBERG Mar 1988 73 p

(Contract F19628-86-D-0003)

(AD-A192799, SRI-ESU-2918, RADC-TR-88-23) Avail NTIS HC A04/MF A01 CSCL 12/6

This report outlines an approach to a methodology for evaluating high performance reliable computers. The purpose of the methodology is to provide a framework and a basis for tool development that will make it possible to conduct such evaluations systematically and efficiently. The increasing complexities of high performance computer systems and the stringent requirement for high reliability in harsh environments (e.g., space) make such an evaluation methodology an absolute necessity. The report discusses sources of difficulty in evaluation, such as the many complexities of multiprocessing, the difficulty of distinguishing various factors (algorithms, software), operating systems, fault diagnostics, etc.) that affect performance and fault tolerance, the use of formal and experimental analyses, and the special problems of computer security. Criteria and suggestions are given for the design of unified working environments and specific classes of tools to support the methodology. GRA

N88-30452# Massachusetts Inst. of Tech., Cambridge
INTEGRATING IMAGES, APPLICATIONS, AND COMMUNICATIONS NETWORKS, VOLUME 5 Final Report, Sep. 1986 - Jan. 1988

AMAR GUPTA and STUART MADNICK Dec 1987 342 p

(Contract DTRS57-85-C-00083)

(AD-A195854, AD-E500978, MIT-KBIISE-5) Avail NTIS HC A15/MF A02 CSCL 05/2

This volume presents practical ideas and prototype systems for integrating existing information and communications resources. It is divided into four parts. The first part, Knowledge-Based Pictorial Information Systems, describes a prototype system that enables users to manage all types of information, especially pictorial information. The Image Database Management System (IDBM) provides an integrated standard that can be used to specify the information to be retrieved, in a format acceptable to all participating computers. The second part, Storage and Retrieval of Pictorial Information in Heterogeneous Computing Systems, studies existing techniques for storing pictorial images, such as bit-mapped mechanisms, vector-based techniques, and quadtree and pyramid-oriented approaches. Recent advances in compression techniques are also discussed. The third part, An Expert System for Accessing and Integrating Design Analysis Knowledge, presents an approach for integrating information from multiple design environments. Mechanical design packages such as CADAM and

CATIA, thermal design packages such as ITAM and PHOENIS, and other specialized packages can be linked together through a common expert system. The fourth part highlights a number of critical connectivity issues in the context of data communication networks maintained by two large organizations. GRA

N89-10668# Massachusetts Inst. of Tech., Cambridge.
INTEGRATING DISTRIBUTED HOMOGENEOUS AND HETEROGENEOUS DATABASES: PROTOTYPES, VOLUME 3 Final Report, Sep. 1986 - Jan. 1988

AMAR GUPTA and STUART MADNICK Dec. 1987 220 p
 (Contract DTRS57-85-C-00083)
 (AD-A195852; AD-E500978; MIT-KBISE-3) Avail: NTIS HC A10/MF A02 CSCL 12/7

This volume discusses key issues relating to distributed databases, and presents alternate methods for integrating them together. It is divided into four parts. The first part, Evolution Towards Strategic Applications of Databases Through Composite Information Systems, divides applications into four categories: intercorporate, inter-divisional, inter-product, and inter-model. The second part, Distributed Homogenous Database systems: A Comparison between Oracle and Ingres, compares commercial products in terms of the levels of transparency and independence supported by them. The third part, Achieving a Single Model for Integrating Heterogenous Databases attempts to come up with a single unified model that encompasses both the database issue and the communication issue. In the communication area, there are two types of standards, connection-oriented and connectionless. In the database area there are multiple standards suited for different environments. The fourth part, A Technical Comparison of Distributed Heterogenous Database Management Systems, describes eight systems being developed around the world. Because of the added complexity involved in translating between multiple systems and multiple data models, distributed heterogenous database systems are more complex than equivalent homogenous ones. While all of these eight systems are able to do global retrieval, their ability to perform global updates and other capabilities is varied. GRA

N89-10674# Annc Research Corp., Annapolis, MD.
DEVELOP AN AUTOMATED DATA BASE MANAGEMENT SYSTEM (DBMS): REPORT ON DBMS SOFTWARE AND USER'S GUIDE Final Report

Aug. 1987 55 p
 (Contract DE-AC01-85DP-20133)
 (DE88-015996; DOE/DP-20133/T1; ARINC-3067-01-01-4437)
 Avail: NTIS HC A04/MF A01

This final report, prepared for the Department of Energy Office of Military Application (OMA), describes the Task Two efforts of Contract DE-AC01-85DP20133. It addresses the software packages that constitute the OMA automated data base management system (DBMS) developed by ARINC Research Corporation. Off-the-shelf software adapted for these efforts and the software written by ARINC Research specifically for the project are also described. In addition to providing details about the DBMS software, the report includes an OMA DBMS User's Guide to be employed as a reference manual by OMA. The report was prepared after an approximately ten-month period devoted to user evaluation of the system. DOE

N89-11621# National Bureau of Standards, Gaithersburg, MD
 Information Systems Engineering Div.
COMPUTER SCIENCE AND TECHNOLOGY: GUIDE TO DISTRIBUTED DATABASE MANAGEMENT
 E. N. FONG and B. K. ROSEN Apr. 1988 36 p
 (PB88-201561; NBS/SP-500/154) Avail: NTIS HC A03/MF A01 CSCL 05/2

Distributed Database Management Systems are exciting and potentially very powerful. However, distributed database management systems often have created increased complexity of database management and controls without providing the expected benefit to the organization's operations. Distributed database management systems may not be desirable for every organization.

Their benefits can be realized only with careful planning, and evaluation of alternative strategies. The guide provides an organization's decision makers the appropriate information to make good decisions in evaluating distributed database management technologies for their individual environments. Also, the guide aids in planning for an orderly migration path into a distributed database environment. GRA

N89-13154# Carnegie-Mellon Univ., Pittsburgh, PA. Software Engineering Inst.

SOFTWARE PROCESS MODELING Final Report
 MARC I. KELLNER and GREGORY A. HANSEN May 1988 53 p
 (Contract F19628-85-C-0003)
 (AD-A197137; CMU/SEI-88-TR-9, ESD-TR-88-010) Avail: NTIS HC A04/MF A01 CSCL 12/5

This paper discusses the topic of software process modeling, a means of reasoning about the processes used to develop and maintain software. Although this term is beginning to come into common use, its meaning varies widely. For the purposes of this paper, software process modeling is defined as a methodology that encompasses a representation approach, comprehensive analysis capabilities, and the capability to make predictions regarding the effects of changes to a process. This paper reports the approach we have taken to software process modeling and summarizes our experiences on the Post Deployment Software Support (PDSS) Project. The paper is structured as follows: Chapter 1 - Introduction; Chapter 2 - Overview of the objectives and capabilities of software processing modeling; Chapter 3 - Overview of the PDSS Information Management Project, describing the context for our modeling experience; Chapter 4 - Details and examples of the modeling approach used on the PDSS Project; Chapter 5 - Outcomes and results of those modeling efforts; Chapter 6 - Lessons learned from this effort, and a list of the capabilities required for successful software process modeling, and Chapter 7 - Conclusions and directions for future work. GRA

N89-13174# Swedish Inst. of Computer Science, Uppsala.
PRACTICAL ISSUES RELATING TO THE INTERNAL DATABASE PREDICATES IN AN OR-PARALLEL PROLOG: EXTENSIONS AND USEFUL HACKS

M. CARLSSON, K. DANHOF, and R. OVERBEEK (Argonne National Lab., Ill.) 1988 14 p Presented at the 5th International Logic Programming Conference, Seattle, Wash., 15 Aug. 1988 Prepared in cooperation with Southern Illinois Univ., Carbondale, Argonne National Lab., Ill.
 (Contract W-31-109-ENG-38)
 (DE88-010019, CONF-880859-1) Avail: NTIS HC A03/MF A01

This technical report is being written to document and explain some of the insights the authors have gained during the implementation of two OR-parallel Prolog systems for shared-memory multiprocessors. We have been quite amazed by how much power and functionality can be achieved through the implementation of just a few primitive predicates. We introduce a few relatively trivial predicates which allow one to implement versions of findall/3, bagof/3, and setof/3 for the multiprocessors environment. Then we show how these predicates can be used to implement AND-parallelism. Finally, we illustrate their use for implementing a limited notion of streams, and how such streams can be used to create a compiler that achieves excellent speedups for multiprocessors with a limited number of processors. DOE

N89-13184# State Univ. of New York, Buffalo Dept. of Computer Science.

SNEPS CONSIDERED AS A FULLY INTENSIONAL PROPOSITIONAL SEMANTIC NETWORK
 STUART C. SHAPIRO and WILLIAM J. RAPAPORT In Syracuse Univ., N.Y. Northeast Artificial Intelligence Consortium (NAIC) Review of Technical Tasks, Volume 2, Part 1 p 181-226 Jul. 1987

(Contract F30602-85-C-0008, SUNY-BRDF-150-9216)
 Avail: NTIS HC A21/MF A03 CSCL 09/2

A semantic network is a data structure typically consisting of

labeled nodes and labeled, directed arcs. The Semantic Network Processing System (SNePS) can be viewed as a semantic network language with facilities for building semantic networks to represent virtually any kind of information or knowledge; retrieving information from them; and performing inference with them. The interpretation of a particular use of SNePS in terms of a philosophical theory of mental entities inspired by Alexius Meinong's Theory of Objects is offered. Presentation of the nodes and arcs used in the interaction, together with some other important ones is given. The criteria for a semantic network are discussed. Author

N89-13901# Colorado State Univ., Fort Collins.

COMPUTER SCIENCE AND STATISTICS. PROCEEDINGS OF THE 18TH SYMPOSIUM ON THE INTERFACE Final Report, 15 Feb. 1986 - 14 Feb. 1987

THOMAS J. BOARDMAN, ed. and IRENE M. STEFANSKI, ed. (American Statistical Association, Washington, D. C.) 26 Aug. 1987 451 p Symposium held in Fort Collins, Colo., 19-21 Mar. 1986

(Contract AF-AFOSR-0070-86; AF PROJ. 2304) (AD-A191296; AFOSR-88-0153TR) Avail: NTIS HC A20/MF A03 CSCL 12/6

The proceedings of a conference on the interface between computer science and statistics are given. Parallel algorithms, parallel architecture, decision making, computer graphics, programming languages, data management, data base management systems, expert systems, survey sampling, supercomputer techniques, and simulation are among the topics discussed.

N89-13911# RAND Corp., Santa Monica, CA.

IMPLICATIONS OF THE LANGUAGE OF DATA FOR COMPUTING SYSTEMS

WILLIAM H. ROGERS In Colorado State Univ., Computer Science and Statistics. Proceedings of the 18th Symposium on the Interface p 90-95 26 Aug. 1987 Prepared in cooperation with Language of Data Project, Sausalito, Calif.

Avail: NTIS HC A20/MF A03 CSCL 12/6

The kind of computer system envisioned under the Language of Data (LOD), including applications which have been implemented and elements not yet developed, is discussed. As such, the system represents a design consideration for future software developers rather than a finished product. Moreover, the set of programs discussed here should not be confused with the theory itself. The understanding of the structure of the datum and of tables developed by this project could be applied to other programs as well. The envisioned programs focus primarily on three themes. First, they focus on a principal application of LOD, the documentation of large databases. Second, they illustrate some of the formal ideas (computation with descriptors and applicability conditions) in ways familiar to statisticians. Third, they incorporate some of the insight into table structure to provide several natural and powerful tools for the data analyst. Author

N89-13920# Massachusetts Inst. of Tech., Cambridge.

STATISTICALLY SOPHISTICATED SOFTWARE AND DINDE

R. W. OLDFORD and S. C. PETERS In Colorado State Univ., Computer Science and Statistics. Proceedings of the 18th Symposium on the Interface p 160-167 26 Aug. 1987 (Contract NSF IST 34-20614)

Avail: NTIS HC A20/MF A03 CSCL 12/6

A prototype system called DINDE and the directed network model of statistical analysis on which it is currently based are discussed. DINDE is a highly interactive display oriented system where the user carries out the analysis by building and maintaining a network representation of it. An example analysis is used to describe this interaction and the analysis management tools required. Author

N89-13921# Washington Univ., Seattle.

A DATA VIEWER FOR MULTIVARIATE DATA

ANDREAS BUJA, CATHERINE HURLEY, and JOHN ALAN McDONALD In Colorado State Univ., Computer Science and

Statistics. Proceedings of the 18th Symposium on the Interface p 171-174 26 Aug. 1987 Prepared in cooperation with Bell Communications Research, Inc., Holmdel, N.J. Avail: NTIS HC A20/MF A03 CSCL 12/6

The Data Viewer is a system for the exploratory analysis of large, high-dimensional datasets, being developed on a Lisp Machine. Suppose we have a multivariate dataset consisting of up to 1000 observations on an (arbitrarily large) number of quantitative variables. How can we examine it. The data viewer tackles this problem using Grand Tour techniques: by moving projection planes it displays a scatterplot movie. Design issues are crucial in the development of this system, in particular with regard to questions of user interface. The Lisp Machine supports object-oriented programming and the use of constraints, and these features are influential in our implementation. Author

N89-14068# Brookhaven National Lab., Upton, NY.

THE AGS BOOSTER CONTROL SYSTEM

R. FRANKEL, E. AUERBACH, B. CULWICK, T. CLIFFORD, S. MANDELL, R. MARIOTTI, C. SALWEN, and N. SCHUMBURG 1988 3 p Presented at the 1st European Particle Accelerator Conference, Rome, Italy, 7 Jun. 1988

(Contract DE-AC02-76CH-00016)

(DE88-013990; BNL-41438; CONF-880695-44) Avail: NTIS HC A01

Although moderate in size, the Booster construction project requires a comprehensive control system. There are three operational modes: as a high intensity proton injector for the AGS, as a heavy ion accelerator and injector supporting a wide range of ions and as a polarized proton storage injector. These requirements are met using a workstation based extension of the existing AGS control system. Since the Booster is joining a complex of existing accelerators, the new system will be capable of supporting multiuser operational scenarios. A short discussion of this system follows. DOE

N89-14176# Air Force Inst. of Tech., Wright-Patterson AFB, OH. Dept. of Computer Science.

DESIGN AND IMPLEMENTATION OF A CONTROLLER AND A HOST SIMULATOR FOR A RELATIONAL REPLICATED DATABASE SYSTEM M.S. Thesis

LEONARD A. LYON 1987 174 p

(AD-A198951; AFIT/CI/NR-88-61) Avail: NTIS HC A08/MF A01 CSCL 12/5

Database machines and parallel database systems are becoming a viable alternative for handling transactions on voluminous databases especially with the declining cost of hardware. Database research has spawned a variety of parallel processing architectures to improve the performance of database machines. However, many of these architectures are based upon unique hardware configurations and technologies including processor-per-track, processor-per-head, and off-the-disk designs. Alternative backend database system which will be utilized for processing transactions on voluminous databases. The complete performance analysis and design of RRDS is currently being carried out by a Ph.D. student at the University of Central Florida. RRDS supports the relational data model and consists of multiple processors running replicated copies of the database management system (DBMS) software on a partitioned database. The general hardware organization is composed of a controller and a collection of replicated computers which can be implemented as microcomputers or minicomputers. GRA

N89-14700# Argonne National Lab., IL. Mathematics and Computer Science Div.

ELEFANT TEST RESULTS UNDER FORTRAN-PLUS ON THE ACTIVE MEMORY TECHNOLOGY DAP 510-8

W. J. CODY Sep. 1988 12 p

(Contract W-31-109-ENG-38)

(DE88-017264; ANL/MCS-TM-125) Avail: NTIS HC A03/MF A01

This report discusses testing of the elementary function library supplied with FORTRAN-PLUS on the Active Memory Technology DAP 510-8 computer in the Mathematics and Computer Science

Division's Advanced Computing Research Facility. Performance tests were conducted using the ELEFUNT suite of programs from the book Software Manual for the Elementary Functions by Cody and Warte. The report includes a brief description of the computing environment, a short analysis of DAP arithmetic, and a summary and analysis of the test results. DOE

N89-15597* Lockheed Missiles and Space Co., Menlo Park, CA. Artificial Intelligence Center.

A MULTIPROCESSING ARCHITECTURE FOR REAL-TIME MONITORING Abstract Only

JAMES L. SCHMIDT, SIMON M. KAO, JACKSON Y. READ, SCOTT M. WEITZENKAMP, and THOMAS J. LAFFEY *In* NASA, Marshall Space Flight Center, Fourth Conference on Artificial Intelligence for Space Applications p 369 Oct. 1988
 Avail: NTIS HC A21/MF A03 CSCL 09/2

A multitasking architecture for performing real-time monitoring and analysis using knowledge-based problem solving techniques is described. To handle asynchronous inputs and perform in real time, the system consists of three or more distributed processes which run concurrently and communicate via a message passing scheme. The Data Management Process acquires, compresses, and routes the incoming sensor data to other processes. The Inference Process consists of a high performance inference engine that performs a real-time analysis on the state and health of the physical system. The I/O Process receives sensor data from the Data Management Process and status messages and recommendations from the Inference Process, updates its graphical displays in real time, and acts as the interface to the console operator. The distributed architecture has been interfaced to an actual spacecraft (NASA's Hubble Space Telescope) and is able to process the incoming telemetry in real-time (i.e., several hundred data changes per second). The system is being used in two locations for different purposes: (1) in Sunnyvale, California at the Space Telescope Test Control Center it is used in the preflight testing of the vehicle; and (2) in Greenbelt, Maryland at NASA/Goddard it is being used on an experimental basis in flight operations for health and safety monitoring. Author

N89-15773 Clarkson Univ., Potsdam, NY.
GLOBAL UPDATES IN INTEGRATION OF DISTRIBUTED DATABASES Ph.D. Thesis

M. SAMY MOHAMED GAMAL-ELDIN 1988 212 p
 Avail: Univ. Microfilms Order No. DA8808024

Applications such as C3I (command, control, communication, and information) systems, banking, and reservation systems are strategic systems. It is desirable to allow updates to distributed data in real time, in addition to having a true conceptual global schema which represents the whole distributed system. Such strategic systems can be created by building a global integration of distributed databases. The problem of integrating separate local databases in a network into a single distributed database, with particular attention to supporting updates in such an integrated database is considered. Constructing methods for update processing in distributed databases requires the solution of problems of relationship among attributes, schema mapping, constraint integration, and update translation. These four problems are addressed in the context of integrating separate databases, all of which are based on the relational data model, or at least have a relational interface to them. Within this context, several problems are addressed: attribute equivalence; embedded attributes; embedded attributes of locality; attribute-locality mappings; locality dependency; 2-dimensional union; global constraints; and globally contradictory constraints. Dissert. Abstr.

N89-16295* Houston Univ., Clear Lake, TX. High Technologies Lab.

DISTRIBUTING PROGRAM ENTITIES IN ADA

PATRICK ROGERS and CHARLES W. MCKAY *In* NASA, Lyndon B. Johnson Space Center, First International Conference on Ada (R) Programming Language Applications for the NASA Space Station, Volume 1 13 p 1986
 Avail: NTIS HC A18/MF A03 CSCL 09/2

In any discussion of distributing programs and entities of programs written in a high order language (HOL), certain issues need to be included because they are generally independent of the particular language involved and have a direct impact on the feasibility of distribution. Of special interest is the distribution of Ada program entities, but many of the issues involved are not specific to Ada and would require resolution whether written in PASCAL, PL/1, Concurrent PASCAL, HAL/S, or any language which provides similar functionality. The following sections will enumerate some of these issues, and will show in what ways they relate to Ada. Also, some (but by no means all) of the issues involved in the distribution of Ada programs and program entities will be discussed. Author

N89-16341* Veda, Inc., Lexington Park, MD.
GENERIC ADA CODE IN THE NASA SPACE STATION COMMAND, CONTROL AND COMMUNICATIONS ENVIRONMENT

D. P. MCDUGALL and T. E. VOLLMAN *In* NASA, Lyndon B. Johnson Space Center, First International Conference on Ada (R) Programming Language Applications for the NASA Space Station, Volume 2 13 p 1986
 Avail: NTIS HC A22/MF A03 CSCL 09/2

The results of efforts to apply powerful Ada constructs to the formatted message handling process are described. The goal of these efforts was to extend the state-of-the-art technology in message handling while at the same time producing production-quality, reusable code. The first effort was initiated in September, 1984 and delivered in April, 1985. That product, the Generic Message Handling Facility, met initial goals, was reused, and is available in the Ada Repository on ARPANET. However, it became apparent during its development that the initial approach to building a message handler template was not optimal. As a result of this initial effort, several alternate approaches were identified, and research is now on-going to identify an improved product. The ultimate goal is to be able to instantly build a message handling system for any message format given a specification of that message format. The problem lies in how to specify the message format, and one that is done, how to use that information to build the message handler. Message handling systems and message types are described. The initial efforts, its results and its shortcomings are detailed. The approach now being taken to build a system which will be significantly easier to implement, and once implemented, easier to use, is described. Finally, conclusions are offered. Author

N89-16389* Naval Research Lab., Washington, DC.
EDITSPEC: A FORTRAN 77 PROGRAM FOR EDITING AND MANIPULATING SPECTRAL DATA FROM THE VARIAN CARY 2390 UV-VIS-NIR SPECTROPHOTOMETER

R. A. BINSTED and J. C. COOPER 19 Oct. 1988 74 p
 Prepared in cooperation with Geo-Centers, Inc., Fort Washington, MD
 (AD-A200352; NRL-MR-6351) Avail: NTIS HC A04/MF A01 CSCL 12/5

EDITSPEC is a FORTRAN 77 program designed to provide a number of editing features for Ultraviolet-Visible-Near Infrared (UV-VIS-NIR) spectral data obtained from the CARY 2300 - 2400 series spectrophotometers. The program is written to operate on a Hewlett-Packard 1000 computer system but with very few system dependent features to enable easy conversion for operation on other host systems. EDITSPEC provides facilities for correction of experimental artifacts and incorrect file descriptors and also includes calculation routines for smoothed, first derivative and second derivative spectra. The program produces new disk files in either the Cary format or in simple ASCII X,Y format for export to curve fitting programs. GRA

N89-20645* Department of Energy, Washington, DC Office of High Energy and Nuclear Physics.

FASTBUS STANDARD ROUTINES

May 1988 155 p
 (DOE/ER-0367) Avail: NTIS HC A08/MF A01

COMPUTERS, TELECOMMUNICATIONS, AND NETWORKS

Standard routines for use with the FASTBUS standard modular high speed data acquisition and control system of ANSI/IEEE Std 960-1986 and IEC Publication 935 are defined. Some basic concepts that are common to all routines are described, as well as routines involved in the management and use of the FASTBUS environment, descriptions of the operational parameters which form part of the FASTBUS environment, and descriptions of the buffer modes which are used to control access to user data buffers by action routines. Also described are routines for carrying out simple and compound transactions on FASTBUS and primitive FASTBUS actions, routines for handling asynchronous events on FASTBUS - responding to service requests and to interrupt messages, routines that are either system or port dependent, and the response of the implementation to errors. Routines are described for controlling this and for extracting status information about previous action. The final section contains a list of all the error codes along with their severity. Author

N89-22369# California Univ., Los Angeles Management Science Inst

REUSING STRUCTURED MODELS VIA MODEL INTEGRATION

ANDREW M. GEOFFRION Sep. 1988 44 p

(Contract N00014-85-K-0143)

(AD-A204652; WMSI-WP-362) Avail. NTIS HC A03/MF A01

CSCL 12/5

This paper begins with a review of reusability and modularity ideas from the software engineering literature, most of which are applicable to the modeling context. Many features of structured modeling support reusability and modularity, and these are noted. The main focus of the paper, however, is on achieving reusability and modularity via the integration of two or more model schemas. A 5-step approach for integrating schemas written in SML (Structured Modeling Language) is proposed for this purpose. Examples are given to illustrate this approach, and the pros and cons of structured modeling for reuse are discussed at some length. GRA

N89-23195# Lawrence Livermore National Lab., CA

A NEW APPROACH TO SYSTEM TESTING

NANCY STORCH 1 Jun. 1988 7 p Presented at the Structured Development Forum X, San Francisco, CA, 8 Aug. 1988

(Contract W-7405-ENG-48)

(DE89-008660; UCRL-98873, CONF-880894-4) Avail. NTIS HC A02/MF A01

This paper describes actual experiences in designing system level test cases for a large on-line commercial transaction system which had just been implemented. Real world, less than perfect conditions existed. Although software engineering methods had been used during the development, up-to-date available documentation was limited as was the availability of knowledgeable persons. Even so, test cases were needed in a timely fashion. An approach was taken to identify a major section of the software as an object and then to develop a state model for it based on the implementation and availability of certain process information in the database such as track flags, status, and time stamps. A flow graph was derived from the state transition diagram. Application of basis path testing to a simplified version of the flow graph lead to a meaningful set of test cases which when run found errors. Not only was this testing a success, but the creation of the state model provided valuable documentation for further understanding and maintenance of the software. DOE

N89-24058# Institute for Computer Applications in Science and Engineering, Hampton, VA.

COMPILING HIGH LEVEL CONSTRUCTS TO DISTRIBUTED MEMORY ARCHITECTURES Final Report

PIYUSH MEHROTRA and JOHN VANROSENDALE Mar 1989 12 p Submitted for publication

(Contract NAS1-18605)

(NASA-CR-181825; NAS 1.26 181825, ICASE-89-20) Avail. NTIS HC A03/MF A01 CSCL 09/2

Current languages for nonshared memory architectures provide a relative low-level programming environment. A set of primitives

such as load balance and data distribution, which allow the programmer to express data-parallel algorithms at a higher level while also permitting control over those aspects of the program critical to performance, are described. Given such a program specification, the compiler automatically generates a distributed program containing send and receive constructs to perform interprocess communication. Author

N89-24068# Stanford Univ., CA Center for Large Scale Scientific Computation.

A VISUAL OBJECT-ORIENTED UNIFICATION SYSTEM Interim Report

JOSEPH OLIGER, RAMANI PICHUMANI, and DULCE PONCELEON 16 Mar. 1989 38 p

(Contract N00014-82-K-0335, N00014-86-K-0565, N00014-87-K-0384)

(AD-A206228, CLASSIC-89-23) Avail. NTIS HC A03/MF A01 CSCL 12/5

This report introduces a software design platform which departs from the style of most design tools by acting as an extension to, rather than a replacement for, existing design tools. The ultimate goal of this system is to unify and integrate the various functions provided by text editors, graphics editors, text formatters, hyper-text and structured decomposition tools. It uses a very general data structure which can manifest itself in a variety of visual forms while enabling the user to easily create and manipulate the objects it represents. This tool is useful for creating large, general purpose, hierarchically structured programs, data structures, documents, and other similar objects. Moreover, this system is designed to allow for a wide variety of functions to be performed on these data objects (such as graph traversal or functional mapping), both from within the environment as well as externally (for example, mapping concurrent computations onto parallel architectures using a post-processor). This system is also considered to be a springboard for investigating future directions in software design and information management. GRA

N89-24069# Syracuse Univ., NY.

AN EXPERIMENTAL INVESTIGATION INTO SOFTWARE RELIABILITY Final Report, Nov. 1985 - Jan. 1987

AMRIT L. GOEL Oct. 1988 124 p

(Contract F30602-81-C-0193)

(AD-A206293, RADC-TR-88-213) Avail. NTIS HC A06/MF A01 CSCL 12/5

This report presents the results of an experiment investigating the effect of FORTRAN and Ada languages on program reliability. The experimental design employed was a full factorial design, i.e., a design in two variables, each at two levels. The problem used in the experiment was the Launch Interceptor Program (LIP), a simple but realistic anti-missile system. Reliability comparisons between Ada and FORTRAN programs were based on the total number of errors as well as on errors found during various testing phases. Some comparisons were also based on error density, the number of errors per 100 non-comment lines of code. It was found that on the average, the Ada programs had about 70 percent fewer errors than the FORTRAN ones. If errors during unit testing were excluded, the Ada program had about 78 percent less errors. Similar differences were found for data based on error causes and error types. GRA

N89-25219# Iowa Univ., Iowa City Dept. of Mechanical Engineering

A LARGE SCALE SOFTWARE SYSTEM FOR SIMULATION AND DESIGN OPTIMIZATION OF MECHANICAL SYSTEMS

BERNHARD DOPKER and EDWARD J. HAUG In NASA, Langley Research Center, Recent Advances in Multidisciplinary Analysis and Optimization, Part 3 p 1319-1333 Apr 1989

Avail. NTIS HC A22/MF A03 CSCL 09/2

The concept of an advanced integrated, networked simulation and design system is outlined. Such an advanced system can be developed utilizing existing codes without compromising the integrity and functionality of the system. An example has been used to demonstrate the applicability of the concept of the

integrated system outlined here. The development of an integrated system can be done incrementally. Initial capabilities can be developed and implemented without having a detailed design of the global system. Only a conceptual global system must exist for a fully integrated, user friendly design system. Further research is needed in the areas of engineering data bases, distributed data bases, and advanced user interface design. Author

N89-25619* Jet Propulsion Lab., California Inst. of Tech., Pasadena

CONCURRENT IMAGE PROCESSING EXECUTIVE (CIPE)

MEEMONG LEE, GREGORY T. COOPER, STEVEN L. GROOM, ALAN S. MAZER, and WINIFRED I. WILLIAMS 1 Oct 1988 102 p
(Contract NAS7-918)
(NASA-CR-185460; NAS 1.26:185460, JPL-PUBL-88-32) Avail NTIS HC A06/MF A01 CSDL 09/2

The design and implementation of a Concurrent Image Processing Executive (CIPE), which is intended to become the support system software for a prototype high performance science analysis workstation are discussed. The target machine for this software is a JPL/Caltech Mark III Hypercube hosted by either a MASSCOMP 5600 or a Sun-3, Sun-4 workstation; however, the design will accommodate other concurrent machines of similar architecture, i.e., local memory, multiple-instruction-multiple-data (MIMD) machines. The CIPE system provides both a multimode user interface and an applications programmer interface, and has been designed around four loosely coupled modules, (1) user interface, (2) host-resident executive, (3) hypercube-resident executive, and (4) application functions. The loose coupling between modules allows modification of a particular module without significantly affecting the other modules in the system. In order to enhance hypercube memory utilization and to allow expansion of image processing capabilities, a specialized program management method, incremental loading, was devised. To minimize data transfer between host and hypercube a data management method which distributes, redistributes, and tracks data set information was implemented. Author

N89-26776# Arizona Univ., Tucson Computer Engineering Research Lab.

FUNCTIONAL DESCRIPTION AND FORMAL SPECIFICATION OF A GENERIC GATEWAY

WON SON CHANG and RALPH MARTINEZ Aug. 1988 227 p
Sponsored by Army Inst. for Research in Management Information, Communications and Computer Science, Atlanta, GA
(Contract B-10-695-51)
(AD-A206581; ASQB-G-C-89-020) Avail NTIS HC A11/MF A02 CSDL 12/7

The generic gateway's characteristics can be summarized as follows: (1) It provides a communication protocol conversion up to transport layer, (2) The connection-less and connection-oriented subnetworks or their services can be interoperable; (3) The reliable data transport is expected by each individual subnetwork independently, because the reliable data transport control can not be expected as a global level by their control mismatch, (4) The generic gateway is decomposed with two distinguishable modules, subnetwork independent and subnetwork dependent blocks, (5) Each subnetwork more specifically subnetwork dependents blocks communicate with subnetwork independent block, through the universal service access points, (6) Each subnetwork interfacing modules can be designed and implemented independently GRA

N89-26777# Arizona Univ., Tucson. Computer Engineering Research Lab.

PROTOCOL INTEROPERABILITY BETWEEN DDN AND ISO (DEFENSE DATA NETWORK AND INTERNATIONAL ORGANIZATION FOR STANDARDIZATION) PROTOCOLS Final Report

JIANYI TAO and RALPH MARTINEZ Aug 1988 279 p Prepared for Georgia Inst. of Tech., Atlanta
(Contract DA PROJ. B-10-695-SI)

(AD-A206582, ASQB-G-C-89-021) Avail NTIS HC A13/MF A02 CSDL 25/5

This study focuses on the following four problem areas (1) the general issues involved in protocol conversion, (2) protocol conversion in the DDN to ISO environment, (3) a detailed understanding of both protocol suites, and (4) approaches to achieve interoperability between DDN protocols (TCP/IP) and ISO protocols (TP-4). The study concludes with recommendations for future protocol research in the area of protocol interoperability GRA

N89-28308# Oak Ridge National Lab., TN. Engineering Technology Div.

APPROACHING DISTRIBUTED DATABASE APPLICATIONS USING A PROGRAMMABLE TERMINAL EMULATOR

J. A. CLINARD, J. J. ROBINSON, J. T. PHILLIPS, JR., and G. L. JOHNSON Jun. 1989 68 p Sponsored in part by Pacific Missile Testing Center
(Contract DE-AC05-84OT-21400)
(DE89-014831, K/DSRD-80) Avail NTIS HC A04/MF A01

Two separate approaches were used to develop a prototype for entering data into a remote host computer in an automated manner. In the first approach, revisions were implemented in the IBM PC's terminal emulator VTEK 4.2. These revisions allowed prewritten script files to be processed to the host based operating system and applications software as if the script file information had been entered on the keyboard. The script processing capability was implemented taking advantage of existing user defined key capability and the DEC VT100 asynchronous terminal emulation of VTEK communications software. At present the script command and data files must be manually created at the PC using an editor or word processor. The script processing capability works with any host based operating system or application software that interacts with a DEC VT100 terminal. An example is provided where VTEK script processing is used to automatically interact with a VAX-based Database Management System (DBMS), INGRES, appending PC resident data records to an INGRES table, creating a default report, aborting to VMS, and disposing of the report, all without touching a key. An appendix is provided which discusses the second approach of developing a prototype VT100 emulator specifically designed for data entry to a remote host computer system. This software loads data automatically into a Vax Datatrieve data base. It provides an alternative method of prototype development. The challenges for future development are identified and discussed. The use of the programmable terminal emulator for data control in the case of distributed database applications is also discussed DOE

N89-28330# Naval Postgraduate School, Monterey, CA
CONVERSION OF MASS STORAGE HIERARCHY IN AN IBM COMPUTER NETWORK M.S. Thesis

LINDA S. MAUCK Mar. 1989 47 p
(AD-A208520) Avail NTIS HC A03/MF A01 CSDL 05/1

With the shift from batch applications to online systems supporting the strategic role of information, corporate or institutional goals tie directly to the information management functions. This has been true at the Naval Postgraduate School (NPS). Like many other Government installations, the NPS Computer Center has to meet its objectives with less than state-of-the-art hardware. In the early 1980's, the Center employed IBM's 3850 Mass Storage Subsystem (MSS) for online storage of student and faculty data sets. It was installed in December 1980 and performed well for over six years. Faced with IBM's announcement (in February 1985) of the limited future connectivity and compatibility and the increasing maintenance costs, the decision was made to replace the MSS with hardware/software alternative that would use a more modern and reliable architecture. The solution, and data set migration process is defined, and the early experience with a multi-level, software-managed, storage system are described. GRA

COMPUTERS, TELECOMMUNICATIONS, AND NETWORKS

N89-28332# Massachusetts Univ., Amherst. Dept. of Electrical and Computer Engineering.

RESOURCE CONTENTION MANAGEMENT IN PARALLEL

SYSTEMS Final Report, Jun. - Dec. 1987

CHRISTOS G. CASSANDRAS, JAMES F. KUROSE, and DON TOWSLEY Apr. 1989 151 p
(Contract F30602-81-C-0169)
(AD-A208809; RADC-TR-89-48) Avail: NTIS HC A08/MF A01 CSCI 12/7

This research effort explored two issues: (1) The comparative study of simple load balancing algorithms for distributed real-time systems which showed that simple policies perform just as well as complex policies in a majority of the cases; (2) The second task was to development of on-line optimization procedures for load balancing algorithms and of task scheduling policies with real-time constraints. GRA

N89-70704# Washington Univ., Seattle. Dept. of Computer Science.

ALLOCATION STRATEGIES FOR APL ON THE CHIP (CONFIGURABLE HIGHLY PARALLEL) COMPUTER M.S. Thesis

JAMES L. SCHAAD Mar. 1987 80 p
(Contract N00014-86-K-0264; NSF DCR-84-16878)
(AD-A203761; TR-87-03-06) Avail: NTIS

N89-71248 Datasave, Inc., Orlando, FL. ALGORITHM FOR SUPPORTING VIEWS IN THE MICROCOMPUTER ENVIRONMENT Final Report

KATHRYN C. KINSLEY 19 Aug. 1986 61 p
(Contract NSF ISI-85-60151)
(PB89-174155; NSF/ISI-86029) Avail: NTIS

N89-71335* Institute for Computer Applications in Science and Engineering, Hampton, VA.

I/O BUFFER PERFORMANCE IN A VIRTUAL MEMORY SYSTEM

STEPHEN W. SHERMAN and RICHARD S. BRICE (George Washington Univ., Washington, DC.) 2 Feb. 1976 26 p Prepared in cooperation with Houston Univ., TX
(Contract NAS1-14101; NGR-09-010-078)
(NASA-CR-185730; ICASE-76-2, NAS 1.26 185730) Avail: NTIS

AI, EXPERT SYSTEMS, AND KNOWLEDGE SYSTEMS

Many of us have high hopes for AI and related concepts and the benefits we see in their use. Concrete applications in IRM are increasing and are presented in this section.

A85-18437# WHY SOLID MODELING?

T. W. BOULTER (Martin Marietta Aerospace, Orlando, FL) Aerospace America (ISSN 0740-722X), vol. 23, Jan. 1985, p. 94-96.
Copyright

The potentials of solid modeling to permit truly automated CAD/CAM are explored in comparisons with the limitations of wire frame (WF) and surface (SM) models. WF cannot differentiate between inner and outer surfaces and SM does not permit computation of mass properties. Solid models eliminate ambiguity and require large computer storage capabilities and fast processing. Physical properties such as moments of inertia, mass, center of gravity, and kinematical behavior can be calculated. The models are built from primitive solids and connected by Boolean operators or from solid segments (SS). SS permits storage of physical data for each segment while the PS must be calculated from the entire shape. Research directions being followed to display dynamic

situations, cross-sections, and composite structure components are discussed. M.S.K.

A86-34986* National Aeronautics and Space Administration. John F. Kennedy Space Center, Cocoa Beach, FL.

ARTIFICIAL INTELLIGENCE - NEW TOOLS FOR AEROSPACE PROJECT MANAGERS

D. C. MOJA (NASA, Kennedy Space Center, Cocoa Beach, FL) IN: Space and society - Progress and promise, Proceedings of the Twenty-second Space Congress, Cocoa Beach, FL, April 23-25, 1985. Cape Canaveral, FL, Canaveral Council of Technical Societies, 1985, p. 12-1 to 12-6. refs
Copyright

Artificial Intelligence (AI) is currently being used for business-oriented, money-making applications, such as medical diagnosis, computer system configuration, and geological exploration. The present paper has the objective to assess new AI tools and techniques which will be available to assist aerospace managers in the accomplishment of their tasks. A study conducted by Brown and Cheeseman (1983) indicates that AI will be employed in all traditional management areas, taking into account goal setting, decision making, policy formulation, evaluation, planning, budgeting, auditing, personnel management, training, legal affairs, and procurement. Artificial intelligence/expert systems are discussed, giving attention to the three primary areas concerned with intelligent robots, natural language interfaces, and expert systems. Aspects of information retrieval are also considered along with the decision support system, and expert systems for project planning and scheduling. G.R.

A87-16697 INCORPORATING KNOWLEDGE RULES IN A SEMANTIC DATA MODEL - AN APPROACH TO INTEGRATED KNOWLEDGE MANAGEMENT

S. Y. W. SU and L. RASCHID (Florida, University, Gainesville) IN: The engineering of knowledge-based systems; Proceedings of the Second Conference on Artificial Intelligence Applications, Miami Beach, FL, December 11-13, 1985. Washington, DC, IEEE Computer Society Press, 1985, p. 250-256. refs
Copyright

This paper presents a framework for an integrated knowledge base management system. The integration of a rule base of knowledge rules with a database of facts or assertions is a key concept in this KBMS and provides for more efficient knowledge processing and management. The objects of the knowledge base comprise facts and relevant rules; this is supported by a technique of incorporating knowledge rules in a semantic data model. The KBMS supports complete specification of the declarative and operational semantics of various kinds of knowledge rules including integrity and security constraints, deductive rules and expert rules. A mechanism for the automatic triggering of knowledge rules and for incorporating these rules into a sequence of operations in a transaction is supported by the KBMS. Author

A87-16706 A KNOWLEDGE BASED SYSTEM APPROACH TO DOCUMENT RETRIEVAL

G. BISWAS, V. SUBRAMANIAN, and J. C. BEZDEK (South Carolina, University, Columbia) IN: The engineering of knowledge-based systems; Proceedings of the Second Conference on Artificial Intelligence Applications, Miami Beach, FL, December 11-13, 1985. Washington, DC, IEEE Computer Society Press, 1985, p. 455-460. Research supported by NCR. refs
(Contract NSF IST-84-07860)
Copyright

This paper discusses the design and implementation of a prototype document retrieval system using a knowledge-based systems approach. Both the domain-specific knowledge base and the inferencing schemes are based on a fuzzy set theoretic framework. Concepts that describe domain topics and relationships between concepts are captured in a knowledge base. Documents are represented as concept-weight pairs and clustered into a few general subsets. The retrieval mechanism uses a two step

approach. In the first step, a pruned list of documents pertinent to the query is produced. In the second step, an evidence combination scheme is used to compute a degree of relevance between the query and individual documents retrieved in step one. Finally, a set of document citations are presented to the user in ranked order as an answer to his query. Author

A88-54484

A DATA-BASE MANAGEMENT SCHEME FOR COMPUTER-AIDED CONTROL ENGINEERING

JAMES H. TAYLOR, KO-HAW NIEH (General Electric Co., Schenectady, NY), and PETER A. MROZ (DuPont Chambers Works, Deepwater, NJ) IN: 1988 American Control Conference, 7th, Atlanta, GA, June 15-17, 1988, Proceedings, Volume 1. New York, Institute of Electrical and Electronics Engineers, 1988, p. 719-724. USAF-sponsored research. refs

Copyright

As CACE (computer-aided control engineering) environments become more comprehensive and more powerful, the need for keeping track of the models, simulations, analysis results, control system designs, and validation study results over the control system design cycle becomes more pressing and the lack of engineering-database-management support becomes more of an impediment to effective controls engineering. In view of this, the authors demonstrate that rigorous engineering-database management for computer-aided control engineering is both important and achievable. A hierarchical organization of CACE database elements is presented, and additional mechanisms for maintaining database integrity are described. I.E.

A89-11718* Nichols Research Corp., Huntsville, AL.

A DATA ANALYSIS EXPERT SYSTEM FOR LARGE ESTABLISHED DISTRIBUTED DATABASES

ANNE-MARIE GNACEK, Y. KIM AN (Nichols Research Corp., Huntsville, AL), and J. PATRICK RYAN (Alabama University, Huntsville) IN: Applications of artificial intelligence V; Proceedings of 5th Meeting, Orlando, FL, May 18-20, 1987. Bellingham, WA, Society of Photo-Optical Instrumentation Engineers, 1987, p. 132-137. NASA-supported research.

Copyright

A design for a natural language database interface system, called the Deductively Augmented NASA Management Decision support System (DANMDS), is presented. The DANMDS system components have been chosen on the basis of the following considerations: maximal employment of the existing NASA IBM-PC computers and supporting software; local structuring and storing of external data via the entity-relationship model; a natural easy-to-use error-free database query language; user ability to alter query language vocabulary and data analysis heuristic; and significant artificial intelligence data analysis heuristic techniques that allow the system to become progressively and automatically more useful. V.L.

A89-12182

SOURCES AND STANDARDS FOR COMPUTERIZED MATERIALS PROPERTY DATA AND INTELLIGENT KNOWLEDGE SYSTEMS

J. G. KAUFMAN (National Materials Property Data Network, Columbus, OH) Engineering with Computers (ISSN 0177-0667), vol. 4, no. 1-2, 1988, p. 75-85. refs

Copyright

The current status of the National Materials Property Data Network, Inc. (MPD Network) and the objectives of the newly formed ASTM Committee E-49 on computerization of Material Property Data are reviewed. The MPD Network is aimed at providing engineers and scientists with on-line access to worldwide sources of reliable, well-documented material property data. A pilot MPD Network is now operating on-line for financial sponsors, and plans are being made for commercial distribution of the Network. ASTM Committee E-49 has the mission of developing and providing guidelines and standards to aid the builders, maintainers, and suppliers of data bases in meeting the needs of industry and in

establishing compatible and consistent sources capable of sharing data. V.L.

A89-17998

AUTOTESTCON '88; PROCEEDINGS OF THE IEEE INTERNATIONAL AUTOMATIC TESTING CONFERENCE, MINNEAPOLIS, MN, OCT. 4-6, 1988

Conference sponsored by IEEE. New York, Institute of Electrical and Electronics Engineers, Inc., 1988, 341 p. For individual items see A89-17999 to A89-18037.

Copyright

The conference presents papers on ATE prognostics for the 90s, testing perspectives, the international session, specialized ATE applications, software trends, IFTE, portable testers, diagnostic techniques, MATE, and integrated diagnostics. Other topics include CASS, BIT testability, supercomputing, TPS, artificial intelligence, advanced technology, RF/EW, and procurement in the 1990s. Consideration is also given to DoD initiatives in the automation of the testability/diagnostic design process, analysis tools for the evaluation of maintenance software, and a portable miniature anechoic chamber. K.K.

A89-20833

AN APPROACH TO AUTONOMOUS ATTITUDE CONTROL FOR SPACECRAFT

R. E. WAGNER and A. N. BLASDEL (Ford Aerospace Corp., Sunnyvale, CA) IN: Guidance and control 1988; Proceedings of the Annual Rocky Mountain Guidance and Control Conference, Keystone, CO, Jan. 30-Feb. 3, 1988. San Diego, CA, Univelt, Inc., 1988, p. 51-64. refs

(AAS PAPER 88-004) Copyright

The use of knowledge based systems for an autonomous satellite anomaly resolution system has been studied. This paper presents the approach to automating many of the operational functions associated with spacecraft and demonstrates the approach by using an attitude control scenario. The described model-based representation of physical systems allows the decomposition of these issues into approachable research projects. Author

A89-21801* National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.

1988 GODDARD CONFERENCE ON SPACE APPLICATIONS OF ARTIFICIAL INTELLIGENCE, GREENBELT, MD, MAY 24, 1988, PROCEEDINGS

JAMES L. RASH, ED. (NASA, Goddard Space Flight Center, Greenbelt, MD) Conference sponsored by NASA. Telematics and Informatics (ISSN 0736-5853), vol. 5, no. 3, 1988, 218 p. For individual items see A89-21802 to A89-21816; Previously announced in STAR as N88-30330.

Copyright

This publication comprises the papers presented at the 1988 Goddard Conference on Space Applications of Artificial Intelligence held at the NASA/Goddard Space Flight Center, Greenbelt, Maryland on May 24, 1988. The purpose of this annual conference is to provide a forum in which current research and development directed at space applications of artificial intelligence can be presented and discussed. The papers in these proceedings fall into the following areas: mission operations support, planning and scheduling; fault isolation/diagnosis; image processing and machine vision; data management; modeling and simulation; and development tools methodologies. Author

A89-21803* National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.

ARTIFICIAL INTELLIGENCE COSTS, BENEFITS, AND RISKS FOR SELECTED SPACECRAFT GROUND SYSTEM AUTOMATION SCENARIOS

WALTER F. TRUSZKOWSKI (NASA, Goddard Space Flight Center, Greenbelt, MD); BARRY G. SILVERMAN (IntelliTek, Inc., Rockville, MD); George Washington University, Washington, DC), MARTHA KAHN, and HENRY HEXMOR (IntelliTek, Inc., Rockville, MD) (NASA, 1988 Goddard Conference on Space Applications of

Artificial Intelligence, Greenbelt, MD, May 24, 1988) Telematics and Informatics (ISSN 0736-5853), vol. 5, no. 3, 1988, p. 163-177. Previously announced in STAR as N88-30332. refs Copyright

In response to a number of high-level strategy studies in the early 1980s, expert systems and artificial intelligence (AI/ES) efforts for spacecraft ground systems have proliferated in the past several years primarily as individual small to medium scale applications. It is useful to stop and assess the impact of this technology in view of lessons learned to date, and hopefully, to determine if the overall strategies of some of the earlier studies both are being followed and still seem relevant. To achieve that end four idealized ground system automation scenarios and their attendant AI architecture are postulated and benefits, risks, and lessons learned are examined and compared. These architectures encompass: (1) no AI (baseline); (2) standalone expert systems; (3) standardized, reusable knowledge base management systems (KBMS); and (4) a futuristic unattended automation scenario. The resulting artificial intelligence lessons learned, benefits, and risks for spacecraft ground system automation scenarios are described. Author

A89-21810* National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.

THE SECOND GENERATION INTELLIGENT USER INTERFACE FOR THE CRUSTAL DYNAMICS DATA INFORMATION SYSTEM

NICHOLAS SHORT, JR. (NASA, Goddard Space Flight Center, Greenbelt, MD) and SCOTT L. WATTAWA (Science Applications Research, Inc., Greenbelt, MD) (NASA, 1988 Goddard Conference on Space Applications of Artificial Intelligence, Greenbelt, MD, May 24, 1988) Telematics and Informatics (ISSN 0736-5853), vol. 5, no. 3, 1988, p. 253-268. Previously announced in STAR as N88-30352. refs Copyright

For the past decade, operations and research projects that support a major portion of NASA's overall mission have experienced a dramatic increase in the volume of generated data and resultant information that is unparalleled in the history of the agency. The effect of such an increase is that most of the science and engineering disciplines are undergoing an information glut, which has occurred, not only because of the amount, but also because of the type of data being collected. This information glut is growing exponentially and is expected to grow for the foreseeable future. Consequently, it is becoming physically and intellectually impossible to identify, access, modify, and analyze the most suitable information. Thus, the dilemma arises that the amount and complexity of information has exceeded and will continue to exceed, using present information systems, the ability of all the scientists and engineers to understand and take advantage of this information. As a result of this information problem, NASA has initiated the Intelligent Data Management (IDM) project to design and develop Advanced Information Management (AIM) project to design and develop Advanced Information Management Systems (AIMS). The first effort of the Project was the prototyping of an Intelligent User Interface (IUI) to an operational scientific database using expert systems, natural language processing, and graphics technologies. An overview of the IUI formulation and development for the second phase is presented. Author

A89-25165# LIVING IN THE PAST - KNOWLEDGE CAPTURE OF EVOLVING SPACE SYSTEMS

MICHAEL L. DREWS (Texas, University, Arlington) AIAA, Aerospace Sciences Meeting, 27th, Reno, NV, Jan 9-12, 1989 8 p refs (AIAA PAPER 89-0190) Copyright

A unique intertwining of trends in labor, commercial computer technology, and spacecraft systems design evolution has created an accelerating need for simple knowledge systems for a variety of products. This paper attempts to verify that hypothesis, and offer a generalized example solution, using off-the-shelf products to capture, convert, condense, and integrate data from multiple formats. Author

A89-2696J

A DISTRIBUTED SENSOR ARCHITECTURE FOR ADVANCED AEROSPACE SYSTEMS

JEFF SCHOESS and GLEN CASTORE (Honeywell Systems and Research Center, Minneapolis, MN) IN: Sensor fusion, Proceedings of the Meeting, Orlando, FL, Apr. 4-6, 1988. Bellingham, WA, Society of Photo-Optical Instrumentation Engineers, 1988, p. 74-85. refs Copyright

The Distributed Sensor Architecture (DSA) has been developed to couple knowledge-based processing with integrated sensors technology in order to provide coherent and efficient treatment of information generated by multiple sensors. In this architecture, multiple smart sensors are serviced by a knowledge-based sensor supervisor to process sensor-related data as an integrated sensor group. Multiple sensor groups can be combined to form a reconfigurable, fault-tolerant sensor fusion framework. The role and topology of this architecture are discussed. An example application of DSA sensor data fusion is presented. Author

A89-33677

APPLICATIONS OF ARTIFICIAL INTELLIGENCE VI: PROCEEDINGS OF THE MEETING, ORLANDO, FL, APR. 4-6, 1988

MOHAN M. TRIVEDI, ED. (Tennessee, University, Knoxville) Meeting sponsored by SPIE. Bellingham, WA, Society of Photo-Optical Instrumentation Engineers (SPIE Proceedings, Volume 937), 1988, 698 p. For individual items see A89-33678 to A89-33685.

(SPIE-937) Copyright

Papers are presented on architectures for AI applications, schemes for image understanding, knowledge-based systems, image segmentation and analysis, expert systems, and uncertainty management. Also considered are computational vision, syntactic learning, three-dimensional vision schemes involving shape recovery and analysis, computer vision models and applications, and parallel architectures. Other topics include path planning, robotic systems, target detection and image understanding, natural language systems, and knowledge acquisition and representation. R.R.

A89-33679* Texas Univ., Austin.

KNOWLEDGE-BASED NETWORK OPERATIONS

CHUAN-LIN WU, SHOW-WAY YEH (Texas, University, Austin), CHAW-KWEI HUNG, STEVEN P. STEDRY, and JAMES P. MCCLURE (California Institute of Technology, Jet Propulsion Laboratory, Pasadena) IN: Applications of artificial intelligence VI, Proceedings of the Meeting, Orlando, FL, Apr. 4-6, 1988. Bellingham, WA, Society of Photo-Optical Instrumentation Engineers, 1988, p. 44-55. refs Copyright

An expert system for enhancing the operability of the ground communication element of the Jet Propulsion Laboratory's Deep Space Network is described. The system performs network fault management, configuration management, and performance management in real time. Extracted management information serves as input to the expert system and is used to update a management information data base. The monitor and control activities involve dividing software for each processor into layers which are each modeled as a finite state machine. R.R.

A89-33685

REAL-TIME KNOWLEDGE-BASED MONITORING OF TELEMETRY DATA

JACKSON Y. READ, JAMES L. SCHMIDT, SIMON M. KAO, and THOMAS J. LAFFEY (Lockheed Artificial Intelligence Center, Menlo Park, CA) IN: Applications of artificial intelligence VI, Proceedings of the Meeting, Orlando, FL, Apr. 4-6, 1988. Bellingham, WA, Society of Photo-Optical Instrumentation Engineers, 1988, p. 622-629. refs Copyright

A multi-processing architecture environment for real-time monitoring and analysis using knowledge-based problem solving

techniques is presented. In the system, a data management process gathers, compresses, scales, and sends incoming telemetry data to other tasks, and an inference process uses telemetry data to perform a real-time analysis on the state and health of the Space Telescope. The I/O process receives telemetry information from the data management process and status messages from the inference process, updates its graphical displays in real time, and acts as an interface to the console operator R.R.

A89-41158* California Univ., Santa Barbara.
**KNOWLEDGE-BASED IMAGE DATA MANAGEMENT - AN
 EXPERT FRONT-END FOR THE BROWSE FACILITY**

DAVID M. STOMS, JEFFREY L. STAR, and JOHN E. ESTES
 (California, University, Santa Barbara) IN 1988 ACSM-ASPRS
 Annual Convention, Saint Louis MO, Mar 13-18, 1988, Technical
 Papers, Volume 4, Falls Church, VA, American Congress on
 Surveying and Mapping and American Society for Photogrammetry
 and Remote Sensing, 1988, p. 69-78, refs
 (Contract NAGW-987)

Copyright

An intelligent user interface being added to the NASA-sponsored
 BROWSE testbed facility is described. BROWSE is a prototype
 system designed to explore issues involved in locating image data
 in distributed archives and displaying low-resolution versions of
 that imagery at a local terminal. For prototyping, the initial
 application is the remote sensing of forest and range land. K.K.

A89-45136* Motion Analysis Corp., Santa Rosa, CA.
**EXPERTVISION - A VIDEO-BASED NON-CONTACT SYSTEM
 FOR MOTION MEASUREMENT**

JAMES S. WALTON (Motion Analysis Corp., Santa Rosa, CA)
 IN: Society of Flight Test Engineers, Annual Symposium, 19th,
 Arlington, TX, Aug 14-18, 1988, Proceedings, Lancaster, CA,
 Society of Flight Test Engineers, 1988, p. IV-1.1 to IV-1.6. Research
 supported by NASA. refs

Copyright

A system known as ExpertVision for obtaining noncontact
 kinematic measurements using standard video signals is described.
 In the system, a video processor extracts edge information from
 video images using a proprietary thresholding technique. Images
 can be examined in real time at up to 200 fields/s, and as many
 as four synchronized inputs can be treated simultaneously; by
 buffering the edge coordinates for each view in dedicated RAM
 memory. Mechanical applications for ExpertVision include the study
 of simple impacts, ballistics, wing flutter, the kinematics of helicopter
 rotor blades, and fluid and gas flow problems. R.R.

N84-11756# Carnegie-Mellon Univ., Pittsburgh, PA Dept of
 Computer Science.

**METAPHOR AND COMMON-SENSE REASONING Interim
 Report**

J. G. CARBONELL and S. MINTON 5 Mar 1983 27 p refs
 (Contract N00014-79-C-0661, N00014-82-C-5076)
 (AD-A131423, CMU-CS-83-110) Avail NTIS HC A03/MF A01
 CSDL 05/10

Inferences based on metaphors appear to play a major role in
 human common sense reasoning. This paper identifies and
 analyzes general inference patterns based upon underlying
 metaphors, in particular the pervasive balance principle. Strategies
 for metaphor comprehension are explored, and analogical mapping
 structures are proposed as a means of representing metaphorical
 relationships between domains. In addition, a framework for a
 computational model embodying principles of metaphorical
 common sense reasoning is discussed. GRA

N84-11819# Miami Univ., Coral Gables, FL Center for Theoretical
 Studies.

**INTERDISCIPLINARY STUDY ON ARTIFICIAL INTELLIGENCE
 Final Report, 15 Oct. 1982 - 14 Oct. 1983**

B. N. KURSUNOGLU Jul. 1983 45 p refs Presented at a
 Workshop on Biol. Dimensions of Artificial Intelligence, Coral
 Gables, Fla., 14-25 Mar. 1983

(Contract DAAG29-82-K-0198)

(AD-A131359, ARO-20126 1-AA) Avail NTIS HC A03/MF A01
 CSDL 06/4

The interdisciplinary workshop on biological dimensions of
 artificial intelligence was organized with a very special objective in
 mind. The objective was to bring together researchers working in
 a variety of areas directly concerned with intelligence, such as
 computer modeling of brain processes, experimental neuro-
 physiology, evolutionary programming and adaptability theory,
 theory modeling and simulation, self-organizing systems, Biophysics
 of information processing, cognitive science, and traditional artificial
 intelligence. The objective behind this objective was to provide a
 vehicle for reviewing and analyzing directions of artificial intelligence
 from the perspective of the full range of scholarly activities relevant
 to this field. Some of the specifically stated objectives in the original
 letter of invitation suggested topics such as learning and adaptation,
 evolutionary algorithms for adaptive pattern recognition and motor
 control, the comparison of computer and biological organization,
 knowledge representation and the comparison of biological and
 computer memory, the potential role of parallelism and the physical
 limits of computation, and the significance of recent experimental
 work on biochemical and molecular switching processes inside
 neurons. GRA

N84-11821# Illinois Univ., Urbana Lab for Coordinated
 Science.

**ARTIFICIAL INTELLIGENCE IMPLICATIONS FOR
 INFORMATION RETRIEVAL**

G. DEJONG Apr 1983 17 p refs Presented at the 6th
 Ann Intern. ACM SIGIR Conf., Washington, 6-8 Jun. 1983
 (Contract F49620-82-K-0009, AF PROJ. 2304)

(AD-A131382, AFOSR-83-0658TR) Avail NTIS HC A03/MF
 A01 CSDL 06/4

The field of information retrieval is already more aware than
 many other fields of the relevance of artificial intelligence.
 Nonetheless there remain exciting applications of artificial
 intelligence that have been so far overlooked. In this paper we
 will point out some of the ways artificial intelligence might influence
 the field of information retrieval. We will then examine one
 application in more detail to discover the kind of technical problems
 involved in its fruitful exploitation. GRA

N84-11823# SRI International Corp., Menlo Park, CA
**RESEARCH ON INTERACTIVE ACQUISITION AND USE OF
 KNOWLEDGE Interim Report, Jul. 1982 - Jan. 1983**

M. E. STICKEL May 1983 30 p refs

(Contract N00039-80-C-0575)

(AD-A131306) Avail NTIS HC A03/MF A01 CSDL 09/2

SRI International is engaged in a long-term effort under DARPA
 sponsorship to conduct basic research on artificial intelligence
 problems central to the construction of computer systems that
 can participate in extended dialogues in natural language with
 their users. A central thrust to our research is that the system be
 able to acquire new concepts, facts, and vocabulary through
 dialogues with the users. It is equally important that the system
 not be limited to querying for individual facts-as it is the case, for
 example, with database query systems. Rather this research
 provides a base for constructing systems that can engage in
 extended interactions to determine what a user intends (including
 when this differs from what he literally requests), and that provide
 responses appropriate to a particular user and discourse situation.
 Among the core capabilities of these systems are those for
 reasoning about the knowledge, goals, and plans of other agents
 where these other agents may be users or other computer systems.
 This report covers work done on the KLAUS (Knowledge-Learning
 and-Using System) project during the period July 1982 to January
 1983. This work consisted of developing two aspects of KLAUS:
 the natural-language-processing component and the deduction
 system component. GRA

N84-11824# Carnegie-Mellon Univ., Pittsburgh, PA. Dept. of Computer Science.

MACHINE LEARNING. PART 1: A HISTORICAL AND METHODOLOGICAL ANALYSIS Interim Report

J. G. CARBONELL, R. S. MICHALSKI, and T. M. MITCHELL 31 May 1983 23 p refs
(Contract N00014-79-C-0661; NSF MCS-82-05166)
(AD-A131424, CMU-CS-83-135-PT-1) Avail. NTIS HC A03/MF A01 CSCL 09/2

Machine learning has always been an integral part of artificial intelligence, and its methodology has evolved in concert with the major concerns of the field. In response to the difficulties of encoding ever-increasing volumes of knowledge in modern AI systems, many researchers have recently turned their attention to machine learning as a means to overcome the knowledge acquisition bottleneck. Part 1 of this paper presents a taxonomic analysis of machine learning organized primarily by learning strategies and secondarily by knowledge representation and application areas. A historical survey outlining the development of various approaches to machine learning is presented from early neural networks to present knowledge intensive techniques. Part II (to be published in a subsequent issue) will outline major present research directions, and suggest viable areas for future investigation. GRA

N84-17929# University of Southern California, Marina del Rey. Inst. for Information Sciences.

INQUIRY SEMANTICS: A FUNCTIONAL SEMANTICS OF NATURAL LANGUAGE GRAMMAR

W. C. MANN Oct. 1983 20 p Presented at the 1st Ann. Conf. of the Assoc. for Computational Linguistics, Pisa (Italy), Sep 1983
(Contract F49620-79-C-0181)
(AD-A135153; ISI/RS-83-8) Avail. NTIS HC A03/MF A01 CSCL 05/7

Programming a computer to operate to a significant degree as an author is a challenging research task. The creation of fluent multiparagraph text is a complex process because knowledge must be expressed in linguistic forms at several levels of organization, including paragraphs, sentences and words, each of which involves its own kinds of complexity. Accommodating this natural complexity is a difficult problem. To solve it we must separate the various relevant kinds of knowledge into nearly independent collections, factoring the problem. Inquiry semantics is a new factoring of the text generation problem. It is novel in that it provides a distinct semantics for the grammar, independent of world knowledge, discourse knowledge, text plans and the lexicon, but appropriately linked to each. It has been implemented as part of the Nigel text generation grammar of English. This paper characterizes inquiry semantics, shows how it factors text generation, and describes its exemplification in Nigel. The resulting description of inquiries for English has three dimensions: the varieties of operations on information, the varieties of information operated upon, and the subject matter of the operations. The definition framework for inquiries involves both traditional and nontraditional linguistic abstractions, spanning the knowledge to be represented and the plans required for presenting it. Author (GRA)

N84-20270# SRI International Corp., Menlo Park, CA. Artificial Intelligence Center.

RESEARCH ON INTERACTIVE ACQUISITION AND USE OF KNOWLEDGE Final Report, 3 Jul. 1980 - 30 Nov. 1983

B. J. GROSZ and M. E. STICKEL Nov. 1983 208 p
(Contract N00039-80-C-0575; SRI PROJ. 1894)
(AD-A137436) Avail. NTIS HC A10/MF A02 CSCL 09/2

This report summarizes research done on the KLAUS project from July 1981 to July 1983. In July 1980 we began work on the second KLAUS system, called MICROKLAUS, and on the technological base needed to support it. Our initial experience with MICROKLAUS led us to redesign the parsing and translation system to provide for a declarative semantics that is easier both to extend and to maintain, and to augment the deduction system along a number of dimensions. These development efforts

proceeded independently, with the natural-language-processing and deduction components being only recently rejoined. We have also made significant progress on several fundamental problems of natural-language semantics and on specifying the planning and reasoning capabilities needed for generating adequate responses. Our systems have been moved from the DEC 2060 to the Symbolics 3600 LISP machine. We expect these new components to provide the core of a new KLAUS system with significantly more powerful capabilities for communication in natural language. The base they provide also leaves us in a position to attack several fundamental research problems holding back the development of advanced KLAUS systems and other types of advanced systems that require high-quality natural-language capabilities. GRA

N84-25370# Stanford Univ., CA. Dept. of Computer Science **THE ADVANTAGES OF ABSTRACT CONTROL KNOWLEDGE IN EXPERT SYSTEM DESIGN**

W. J. CLANCEY Nov. 1983 21 p Presented at the Natl. Conf. on Artificial Intelligence, 1983
(Contract N00014-79-C-0302)
(AD-A139978, SU-STAN-CS-83-995, HPP-83-17, SU-TR-7) Avail. NTIS HC A03/MF A01 CSCL 06/4

A poorly designed knowledge base can be as cryptic as an arbitrary program and just as difficult to maintain. Representing control knowledge abstractly, separately from domain facts and relations, makes the design more transparent and explainable. A body of abstract control knowledge provides a generic framework for constructing knowledge bases for related problems in other domains and also provides a useful starting point for studying the nature of strategies. Author (GRA)

N84-28670# Naval Postgraduate School, Monterey, CA **OFFICE AUTOMATION: A LOOK BEYOND WORD PROCESSING M.S. Thesis**

M. E. DUBOIS, JR. Jun. 1983 135 p refs
(AD-A132764) Avail. NTIS HC A07/MF A01 CSCL 15/5

A capsulated examination of what office automation is, what it consists of, what applications are available, and how it can be implemented is presented. The problems of implementing an automated office and the possible impact it can have on human office workers are also addressed. Word processing was the first of various forms of office automation technologies to gain widespread acceptance and usability in the business world. For many, it remains the only form of office automation technology. Office automation, however, is not just word processing, although it does include the function of facilitating and manipulating text. In reality, office automation is not one innovation, or one office system, or one technology, but rather it is the integration of a broad set of office system, information processing and communications technologies. Office automation encompasses a wide span of applications which are examined individually as well as collectively. GRA

N84-31050# California Univ., San Diego Inst. for Cognitive Science.

INDUCTIVE INFORMATION RETRIEVAL USING PARALLEL DISTRIBUTED COMPUTATION

M. C. MOZER Jun. 1984 27 p
(Contract N00014-79-C-0323)
(AD-A142712; ICS-8406; ONR-8405) Avail. NTIS HC A03/MF A01 CSCL 09/2

Massively parallel, distributed models of computation offer a new approach to the representation and manipulation of knowledge. This paper reports on an application of parallel models to the area of information retrieval. The retrieval system described makes dynamic use of the internal structure of a database to infer relationships among items in the database. Using these relationships, the system can help overcome incompleteness and imprecision in requests for information, as well as in the database itself. Author (GRA)

N85-11618# Navy Personnel Research and Development Center, San Diego, CA.
IMPLICATIONS OF ARTIFICIAL INTELLIGENCE FOR A USER DEFINED TECHNICAL INFORMATION SYSTEM
 R. J. SMILLIE *In* Denver Research Inst. Artificial Intelligence in Maintenance p 353-359 Jun. 1984
 (AD-P003938) Avail: NTIS HC A22/MF A03 CSCL 05/2

UDTIS is an electronic, computer-based device related to Stanley Kubrick's 2001's HAL. Size is unknown, but UDTIS has contained within it or has access to all the technical and training information of the particular operational system for which UDTIS covers. UDTIS may have multiple screens to permit simultaneous viewing of different types of technical information. Display characteristics are unknown, but it does present the technical information in a form that the user readily understands. The degree of interactivity is also unknown, but UDTIS is more than user friendly. UDTIS has to know the background and capabilities of the user and has to anticipate the needs of the user. GRA

N85-11626# Hughes Aircraft Co., Long Beach, CA. Support Systems.

INTELLIGENT INFORMATION RETRIEVAL FROM ON-LINE TECHNICAL DOCUMENTATION

A. F. GRIFFIN *In* Denver Research Inst. Artificial Intelligence in Maintenance p 481-491 Jun. 1984
 (AD-P003946) Avail: NTIS HC A22/MF A03 CSCL 09/2

Computerized maintenance manuals contained in massive, on-line text and graphics data bases require an intelligent facility for information retrieval. An unsophisticated user must be able to easily find specific facts, procedures, etc. without having to specify precisely the information he seeks. Hughes is developing an intelligent retrieval approach based on semantic network knowledge representation. Because conventional serial computers are too slow for large semantic networks, we have designed and prototyped special purpose, parallel processing hardware called Associative Loop Memory (ALOOM). ALOOM also dynamically organizes a knowledge base in a manner that imitates human memory. Author (GRA)

N85-11628# Yale Univ., New Haven, CT. Dept. of Computer Science.

MEMORY-BASED EXPERT SYSTEMS Interim Report, 15 Jan. 1983 - 14 Jan. 1984

R. C. SCHANK Aug. 1984 11 p
 (Contract F49620-82-K-0010)
 (AD-A145612; AFOSR-84-0814TR) Avail: NTIS HC A03/MF A01 CSCL 09/2

During this period the investigators produced four papers with titles including, knowledge reorganization and reasoning style, Assignment of responsibility in ethical judgments, Generating hypotheses to explain prediction failures, and Learning, explanation, and a little history. They are developing a model of expertise that more closely resembles the way in which humans become experts, namely, through experience. They assume that the rule-base is not the primary repository of knowledge, but rather rules are derived from experience. Their model addresses the three problems given above as follows. (1) The knowledge-base is derived primarily from the enumeration of specific cases or experiences. They have found that a human expert is much more capable of recalling experiences than articulating internal rules. They suggest that the reason for this difference is that the human expert may not in fact be using rules in the first place. (2) As problems are presented to the system for which no specific case or rule can match exactly, the system can reason from more general similarities to compute up with an answer. This second level of reasoning should more closely resemble human problem solving behavior when people are confronted with novel situations. (3) A cornerstone to this method is automatic learning. The system's memory of experiences will be changed and augmented by each additional case that is presented. The system will remember the problems that it has encountered and use that information to solve future problems. These three principles of the memory-based expert systems model are being tested in several related projects. GRA

N85-12615# SRI International Corp., Menlo Park, CA. Artificial Intelligence Center.

KNOWLEDGE REPRESENTATION AND NATURAL-LANGUAGE SEMANTICS Annual Technical Report, 1 Jun. 1983 - 30 May 1984

R. C. MOORE 13 Jul. 1984 10 p
 (Contract F49620-82-K-0031)
 (AD-A146025; AFOSR-84-0799TR; ATR-2) Avail: NTIS HC A02/MF A01 CSCL 05/7

Central to almost all aspects and applications of artificial intelligence is the representation and manipulation of large bodies of knowledge about the world. When viewed from the perspective of their ability to express facts about the external world, however, most knowledge representation schemes currently used in artificial intelligence are constrained by the limits of first-order logic. That is, they provide terms for referring to individuals, predicates for expressing properties and relations of individuals, and mechanisms that achieve some of the effects of propositional connectives and quantifiers. Much research effort has been expended on ways of organizing knowledge bases and developing information retrieval mechanisms; in terms of pure expressive power, however, existing representation systems are rather limited. This issue is brought into sharp focus when one seriously attempts to analyze the semantic content of expressions in natural language, since many types of linguistic expressions seem to require something beyond first-order logic to represent their meaning perspicuously. This project undertakes a program basic research in knowledge representation, focusing on the representation of concepts needed for the semantic analysis of natural language. The objectives of the project are to produce formalisms, suitable for manipulation by computer, for the representation of specific concepts that are important for natural-language semantics, and to give an independent account of the meaning of such representations using the tools of formal logic. Author (GRA)

N85-12784 Pennsylvania Univ., Philadelphia
PRESERVING THE TIME DIMENSION IN INFORMATION SYSTEMS Ph.D. Thesis

G. ARIAV 1984 219 p
 Avail: Univ. Microfilms Order No. DA8417256

Time is a universal and pervasive aspect of human activities, yet it is rarely reflected in the ways computer-based information systems are constructed. A useful and feasible design of a data management system that captures and preserves the inherent dynamics of its content, and explicitly deals with time as it stores, retrieves, and presents data is identified. The functional requirements for temporally oriented information systems, the formulation of a data model that captures subtle aspects of the time dimension, the formulation of end-user's syntax for querying a database based on such data model, and the design of an integrated user interface that graphically conveys temporal properties of data retrieved from the associated database are presented. The guidelines along which the temporally oriented data model and a corresponding data management system were developed are explicated. Dissert. Abstr.

N85-25003 Purdue Univ., West Lafayette, IN.
THE RETRIEVAL EXPERT MODEL OF INFORMATION RETRIEVAL Ph.D. Thesis

S. C. DEERWESTER 1984 102 p
 Avail: Univ. Microfilms Order No. DA8500361

The purpose of an information retrieval system is to meet information needs. People who are expert at meeting information needs go about satisfying them much differently and, in general, more successfully than automated systems. A descriptive model of how these experts satisfy information needs is described. This model can be used prescriptively in the design of an information retrieval system whose performance is similar to that of a human expert. Dissert. Abstr.

N86-15213# Defense Technical Information Center, Alexandria, VA.

EXAMINING LEARNING THEORY OF ONLINE INFORMATION RETRIEVAL SYSTEMS AND APPLICATIONS IN COMPUTER-AIDED INSTRUCTION: IMPLICATIONS FOR THE DEFENSE TECHNICAL INFORMATION CENTER'S COMPUTER-AIDED INSTRUCTION Final Report

S. A. WITGES Sep. 1985 39 p
(AD-A159001; DTIC/TR-85/11) Avail NTIS HC A03/MF A01 CSCI 05/10

The Defense Technical Information Center (DTIC) is developing a computer-aided instruction (CAI) tutorial course entitled Introduction to DROLS Retrieval in order to train users of its online information retrieval system, the Defense RDT&E Online System (DROLS). In order to get maximum benefits of CAI to DTIC, this paper examined three areas: (1) Learning theory as it relates to online retrieval systems That is, how do humans learn these systems; and (2) Learning theory and its application to CAI, and (3) An advance draft of DTIC's in-house-developed CAI course entitled Introduction to F recommendations are presented in all three areas. GRA

N86-20173# MacAulay-Brown, Inc., Fairborn, OH. **AUTOMATED INFORMATION MANAGEMENT TECHNOLOGY (AIM-TECH): CONSIDERATIONS FOR A TECHNOLOGY INVESTMENT STRATEGY Final Report**

W. REITMAN, R. M. WEISCHEDEL, K. R. BOFF, M. E. JONES, and J. P. MARTINO May 1985 216 p
(Contract F33615-82-C-0513)
(AD-A161139; AFAMRL-TR-85-042) Avail NTIS HC A10/MF A02 CSCI 09/2

The Automated Information Management Technology Program (AIM-Tech) has focused on evaluating the key factors to an investment strategy for implementing artificial intelligence technology in three technical domains: systems design, pilot/aircrew automation, and command, control, and communications (C3). A state-of-the-art review of artificial intelligence (AI), functional specifications for future AI aided systems, and required AI capabilities are discussed. The state-of-the-art review assesses eight technology areas: expert systems and knowledge engineering, natural language, knowledge representation, computer vision, tutoring and training, planning and problem solving under real world conditions, AI tools and environments, and speech. Functional specifications are classified into three groups for each technical domain: communications, expert understanding, and decision aiding. Futuristic scenarios were constructed in which information and control management choke points are resolved by the hypothetical application of machine intelligence for each of the three domains. Author

N86-30573# Carnegie-Mellon Univ., Pittsburgh, PA. Robotics Inst.

THE ROLE OF DATABASES IN KNOWLEDGE-BASED SYSTEMS Interim Report

M. S. FOX and J. MCDEARMOTT Feb 1986 29 p
(Contract F49620-82-K-0017)
(AD-A166365; CMU-RI-TR-86-3) Avail NTIS HC A03/MF A01 CSCI 09/2

This paper explores the requirements for database (DB) techniques in the construction of knowledge-based systems (KBS). While early work in Artificial Intelligence (AI) has focused on techniques such as representation and problem-solving, scant attention was paid to the issues to which database research has focused (e.g., data sharing, query optimization, transaction processing). Our principal premise is that although it has appeared that there was little intersection between the particular focus of each group, there is a significant overlap in needs. The maturing of AI techniques has recently led to their application outside of the laboratory, thus thrusting upon them problems requiring DB solutions. On the other hand, DB needs have expanded to include more expressive data models and more powerful query languages (e.g., supporting inference). To ascertain KBS requirements for DBs, three KBSs are described. Each is analyzed from the

perspective of the symbol and knowledge level concepts developed by Newell NEWEB1. Limitations inherent in this perspective are identified. A new level, the organization level, is proposed as a means of identifying and dealing with these limitations. Three knowledge-based systems are reviewed. XCON/R1, ISIS, and Callisto. GRA

N87-15025# Ohio State Univ., Columbus. **DISTRIBUTED KNOWLEDGE BASE SYSTEMS FOR DIAGNOSIS AND INFORMATION RETRIEVAL Annual Report, 1 Jul. 1984 - 30 Jun. 1985**

B. CHANDRASEKARAN Sep. 1985 104 p
(Contract AF-AFOSR-0255-82)
(AD-A170830; AFOSR-86-0509TR) Avail NTIS HC A06/MF A01 CSCI 09/4

During the year, progress was made in our research on distributed approaches to knowledge-based problem-solving in the following areas. (1) We have developed an approach called consolidation to reason qualitatively about the behavior of systems of components. This approach and the more classical approach of qualitative simulation are complementary. (2) We have made further progress in developing an architectural framework for diagnostic reasoning. (3) We have elucidated some of the criteria that govern how design plans are selected for further refinement in design problem solving. (4) We have identified a number of generic tasks into which the information processing activity of most of the expert systems can be decomposed. These generic tasks are at a much higher level of abstraction, and this should make knowledge acquisition and explanation for expert systems easier. (5) We have clarified how symbolic qualitative knowledge-based processing helps when problems get complex by considering the concrete task of classification. We compare the pattern recognition and artificial intelligence approaches to the problem. Author (GRA)

N87-18528*# Princeton Univ., NJ Dept of Mechanical and Aerospace Engineering **INVESTIGATION OF AIR TRANSPORTATION TECHNOLOGY AT PRINCETON UNIVERSITY, 1983**

ROBERT F. STENGEL In NASA Langley Research Center Joint University Program for Air Transportation Research, 1983 p 51-56 Mar 1987

Avail NTIS HC A05/MF A01 CSCI 01/3

Progress is discussed for each of the following areas: voice recognition technology for flight control, guidance and control strategies for penetration of microbursts and wind shear, application of artificial intelligence in flight control systems, and computer-aided aircraft design. BG

N87-24238# Rutgers - The State Univ., New Brunswick, NJ **EXPERIMENTS ON THE COGNITIVE ASPECTS OF INFORMATION SEEKING AND INFORMATION RETRIEVING Final Report, 1985-1987**

TEFKO SARACEVIC, PAUL KANTOR, ALICE CHAMIS, and DONNA TRIVISON (Case Western Reserve Univ., Cleveland, Ohio) Jan 1987 584 p
(Contract NSF IST-87-05411)

(PB87-157699) Avail NTIS HC A25/MF A04 CSCI 05/2

The aim of the study was to contribute to the formal, scientific characterization of the elements involved in information seeking and retrieving, particularly in relation to the cognitive decisions and human interactions involved. The objectives were to conduct experiments and observations under as real-life conditions as possible relative to: user context of questions in information retrieval, the structure and classification of questions, cognitive traits and decision making of searchers, and different searches of the same question. The study involved 40 users with 1 question each, 39 searchers, 360 searches, and 5411 unique documents evaluated by users. The final report contains detailed descriptions of model, methods, procedures, and results obtained. An appendix contains the raw data, question, and forms used. GRA

N88-12421* # Pennsylvania State Univ., University Park.
ADVANCED TECHNIQUES FOR THE STORAGE AND USE OF VERY LARGE, HETEROGENEOUS SPATIAL DATABASES. THE REPRESENTATION OF GEOGRAPHIC KNOWLEDGE: TOWARD A UNIVERSAL FRAMEWORK Interim Progress Report 2, 2 Apr. - 30 Jun. 1987
 DONNA J. PEUQUET 15 Dec. 1987 66 p
 (Contract NAG5-798)
 (NASA-CR-181517, NAS 1 26.181517) Avail. NTIS HC A04/MF A01 CSCL 05/2

A new approach to building geographic data models that is based on the fundamental characteristics of the data is presented. An overall theoretical framework for representing geographic data is proposed. An example of utilizing this framework in a Geographic Information System (GIS) context by combining artificial intelligence techniques with recent developments in spatial data processing techniques is given. Elements of data representation discussed include hierarchical structure, separation of locational and conceptual views, and the ability to store knowledge at variable levels of completeness and precision. Author

N88-15725* # Defense Technical Information Center, Alexandria, VA. Office of Information Syst Ems and Technology.
DOD GATEWAY INFORMATION SYSTEM (DGIS) COMMON COMMAND LANGUAGE: THE FIRST PROTOTYPING AND THE DECISION FOR ARTIFICIAL INTELLIGENCE
 ALLAN D. KUHN, RANDY L. BIXBY, and DUC TIEN TRAN Aug. 1987 26 p
 (AD-A185950; AD-F000114; DTIC/TR-87/19; DTIC-AI-FOUNDATION-SER-4) Avail. NTIS HC A03/MF A01 CSCL 05/2

DoD gateway information system (DGIS) began its initial prototype in C language with DIALOG, BRS, NASA/RECON, and DROLS. These prototypes in a third-generation algorithmic language brought to the surface a number of problems and questions in dealing with the distinctions of information systems. The issues concern both the user interface and the development design. Experiences, results, and conclusions in working with these systems are brought out. The decision to convert to and continue CCL development with artificial intelligence tools is explained. Our effort is a merging of PROLOG and C capabilities, to provide the DGIS user an AI-based searcher assistant interface that makes the human-machine interaction more human-like on DGIS. GRA

N88-16392* # Louisiana State Univ., Baton Rouge. Dept. of Computer Science.
PROBLEM SOLVING AS INTELLIGENT RETRIEVAL FROM DISTRIBUTED KNOWLEDGE SOURCES
 ZHENGXIN CHEN In NASA. Marshall Space Flight Center, Third Conference on Artificial Intelligence for Space Applications, Part 1 p 165-169 Nov. 1987
 Avail. NTIS HC A18/MF A03 CSCL 09/2

Distributed computing in intelligent systems is investigated from a different perspective. From the viewpoint that problem solving can be viewed as intelligent knowledge retrieval, the use of distributed knowledge sources in intelligent systems is proposed. Author

N88-16423* # Boeing Aerospace Co., Huntsville, AL
FOUNDATION: TRANSFORMING DATA BASES INTO KNOWLEDGE BASES
 R B PURVES, JAMES R CARNES, and DANNIE E CUTTS (Boeing Co., Huntsville, Ala.) In NASA. Marshall Space Flight Center, Third Conference on Artificial Intelligence for Space Applications, Part 1 p 353-357 Nov. 1987
 Avail. NTIS HC A18/MF A03 CSCL 05/2

One approach to transforming information stored in relational data bases into knowledge based representations and back again is described. This system, called Foundation, allows knowledge bases to take advantage of vast amounts of pre-existing data. A benefit of this approach is inspection, and even population, of data bases through an intelligent knowledge-based front-end. Author

N88-16424* # National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.
THE INTELLIGENT USER INTERFACE FOR NASA'S ADVANCED INFORMATION MANAGEMENT SYSTEMS
 Abstract Only
 WILLIAM J. CAMPBELL, NICHOLAS SHORT, JR., LARRY H. ROLOFS, and SCOTT L. WATTAWA (Science Applications Research, Landover, Md.) In NASA. Marshall Space Flight Center, Third Conference on Artificial Intelligence for Space Applications, Part 1 p 359-360 Nov. 1987
 Avail. NTIS HC A18/MF A03 CSCL 09/2

NASA has initiated the Intelligent Data Management Project to design and develop advanced information management systems. The project's primary goal is to formulate, design and develop advanced information systems that are capable of supporting the agency's future space research and operational information management needs. The first effort of the project was the development of a prototype Intelligent User Interface to an operational scientific database, using expert systems and natural language processing technologies. An overview of Intelligent User Interface formulation and development is given. Author

N88-17337* # Air Force Wright Aeronautical Labs., Wright-Patterson AFB, OH.
MANAGEMENT OF COMPLEX INFORMATION IN SUPPORT OF EVOLVING AUTONOMOUS EXPERT SYSTEMS Final Report, Jan. 1983 - Mar. 1987
 EUGENIO MARTINEZ Sep. 1987 75 p
 (AD-A166680, AFWAL-TR-87-1123) Avail. NTIS HC A04/MF A01 CSCL 09/2

Automata whose performance is dependent on specific information are referred to as expert systems. These effect and/or induce situations in the mission environment purposely and as supported by their respective subdomains should be able and capable of evolving concurrently with and relative to an ever evolving mission environment. Information perceived from the latter may be complex, i.e., with multivariate, interrelated and dynamic patterns. The following addresses the problem of complex information management in support of autonomous expert systems within evolving environments. Emphasis is placed on the systems ability to infer generalizations, appraise the circumstantial states of the mission environment, and perform appropriate decision making. GRA

N88-20052* # Bolt, Beranek, and Newman, Inc., Cambridge, MA
KREME (KNOWLEDGE REPRESENTATION, EDITING AND MODELING ENVIRONMENT): A USER'S INTRODUCTION, PHASE 1
 GLENN ABRETT, MARK BURSTEIN, JOHN GUNSHENAN, and LIVIA POLANYI Apr. 1987 74 p
 (Contract F30602-85-C-0005)
 (AD-A188906, BBN-6508) Avail. NTIS HC A04/MF A01 CSCL 05/2

Frame Knowledge Base is a problem which becomes increasingly more complex as taxonomies get larger. KREME provides a classifier to automatically check subsumption relations between frames. The KREME editing environment provides a macro-editing facility, for large-scale revisions of portions of a knowledge base. The macro editor allows sets of operations to be performed repeatedly over portions of a knowledge base. The required editing operations can be demonstrated by example and applied to specified sets of knowledge structure automatically. The KREME Rule Editor provides full support for important rule editing operations. GRA

N88-20899* # Rochester Univ., NY. Dept. of Computer Science
KNOWLEDGE RETRIEVAL AS SPECIALIZED INFERENCE
 ALAN M. FRISCH May 1987 105 p
 (Contract N00014-80-C-0197, NSF-DCR-83-51665)
 (AD-A189042, TR-214) Avail. NTIS HC A06/MF A01 CSCL 12/9

Artificial intelligence reasoning systems commonly contain a large corpus of declarative knowledge, called a knowledge base.

(KB), and provide facilities with which the system's components can retrieve this knowledge. Formal specifications that capture certain informal intuitions about retrieval are developed, studied, and implemented by retrieval algorithms. Consistent with the necessity for fast retrieval is the guiding intuition that a retriever is, at least in simple cases, a pattern matcher, though in more complex cases it may perform selected inferences such as property inheritance. The entire process of retrieval can be reviewed as a form of inference and hence the KB as a representation, not merely a data structure. A retriever makes a limited attempt to prove that a queried sentence is a logical consequence of the KB. When constrained by the no-chaining-restriction, inference becomes indistinguishable from pattern matching. Imagining the KB divided into quanta, a retriever that respects this restriction cannot combine two quanta in order to derive a third. The techniques of model theory will build non-procedural specifications of retrievability relations, which determine what sentences are retrievable from what KBs. Model-theoretic specifications are presented for four retrievers, each extending the capabilities of the previous one. GRA

N88-30352* National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.

THE SECOND GENERATION INTELLIGENT USER INTERFACE FOR THE CRUSTAL DYNAMICS DATA INFORMATION SYSTEM

NICHOLAS SHORT, JR. and SCOTT L. WATTAWA (Science Applications Research, Greenbelt, Md.) In *its* The 1988 Goddard Conference on Space Applications of Artificial Intelligence p 313-327 Aug. 1988

Avail: NTIS HC A19/MF A03 CSCL 05/2

For the past decade, operations and research projects that support a major portion of NASA's overall mission have experienced a dramatic increase in the volume of generated data and resultant information that is unparalleled in the history of the agency. The effect of such an increase is that most of the science and engineering disciplines are undergoing an information glut, which has occurred, not only because of the amount, but also because of the type of data being collected. This information glut is growing exponentially and is expected to grow for the foreseeable future. Consequently, it is becoming physically and intellectually impossible to identify, access, modify, and analyze the most suitable information. Thus, the dilemma arises that the amount and complexity of information has exceeded and will continue to exceed, using present information systems, the ability of all the scientists and engineers to understand and take advantage of this information. As a result of this information problem, NASA has initiated the Intelligent Data Management (IDM) project to design and develop Advanced Information Management Systems (AIMS). The first effort of the Project was the prototyping of an Intelligent User Interface (IUI) to an operational scientific database using expert systems, natural language processing, and graphics technologies. An overview of the IUI formulation and development for the second phase is presented Author

N88-30375* Massachusetts Inst of Tech., Cambridge. Artificial Intelligence Lab.

EXPLOITING LEXICAL REGULARITIES IN DESIGNING NATURAL LANGUAGE SYSTEMS

BORIS KATZ and BETH LEVIN Apr. 1988 25 p

(Contract N00014-85-K-0124)

(AD-A195922; AI-M-1041) Avail NTIS HC A03/MF A01 CSCL 05/7

This paper presents the lexical component of the START Question Answering system developed at the MIT Artificial Intelligence Lab. START is able to interpret correctly a wide range of semantic relationships associated with alternate expressions of the arguments of verbs. The design of the system takes advantage of the results of recent linguistic research into the structure of the lexicon, allowing START to attain a broader range of coverage than many existing systems. It is concluded that the addition of a component that explicitly encodes verb classes and their characteristic properties, enables the START system to han-

dle a wide range of phenomena reflecting semantic-syntactic correspondences that are characteristic of English verbs. By factoring properties that belong to whole classes of verbs out of the entries of individual verbs and letting these entries simply designate the verb's class membership, we do more than merely simplify entries. We facilitate the addition of new words to the lexicon and make it easier to extend the system's coverage of linguistic phenomena. GRA

N88-30449* Massachusetts Inst. of Tech., Cambridge. **KNOWLEDGE-BASED INTEGRATED INFORMATION SYSTEMS ENGINEERING: HIGHLIGHTS AND BIBLIOGRAPHY. KNOWLEDGE-BASED INTEGRATED INFORMATION SYSTEMS ENGINEERING (KBIISE) PROJECT, VOLUME 1 Final Report, Sep. 1986 - Jan. 1988**

AMAR GUPTA, ed. and STUART MADNICK, ed. Dec. 1987 134 p Sponsored in part by the Department of the Air Force, Washington, D.C.

(Contract DTR57-85-C-00083)

(AD-A195850; AD-E500978; MIT-KBIISE-1) Avail: NTIS HC A07/MF A01 CSCL 12/7

This volume presents the highlights of the Knowledge-Based Integrated Information Systems Engineering (KBIISE) project, an effort that focuses on identifying and understanding the key issues involved in the intelligent integration of large-scale distributed information systems. Underlying trends in the information technology area have led to a situation where most organizations depend on a portfolio of systems, ranging from mainframes to minicomputers, and from general purpose workstations to sophisticated CAD/CAM systems, to support their computational requirements. The large size of individual systems and the high degree of diversity between systems make the task of integrating islands of disparate information systems very formidable. The integration of existing system involves surmounting major technical and non-technical barriers which are described in the first part of this volume. The significance of these barriers is analyzed, and approaches for mitigating key problems are developed. Apart from the major issues of concurrency control and recovery in a heterogeneous computing environment, the technical analysis focuses on the subjects of logical connectivity and the use of expert systems technology to draw meaningful inferences in situations characterized by incomplete or conflicting information. The second part of this volume contains a comprehensive annotated bibliography of published papers and technical reports that relate to Knowledge-Based Integrated Information Systems GRA

N88-30454* Massachusetts Inst. of Tech., Cambridge. **TECHNICAL OPINIONS REGARDING KNOWLEDGE-BASED INTEGRATED INFORMATION SYSTEMS ENGINEERING, VOLUME 8 Final Report, Sep. 1986 - Jan. 1988**

AMAR GUPTA and STUART MADNICK Dec 1987 339 p Sponsored in part by DOT, DOD, and AF

(Contract DTR57-85-C-00083)

(AD-A195857; AD-E500978; MIT-KBIISE-8) Avail NTIS HC A15/MF A02 CSCL 12/7

This volume encapsulates the views of a panel of experts drawn from government, industry and academia. It is divided into three parts. The first part, Record of discussions held at the first meeting of Technical Advisory Panel on February 17, 1987, highlights the most significant dimensions of Knowledge-Based Integrated Information Systems Engineering. The second part, Record of discussions held at the second meeting of Technical Advisory Panel on May 21, and 22, 1987, presents opinions in the areas of. Organization, Strategy, and Management, Distributed Database Technology, Knowledge and Semantics, and Information Modeling and Mapping. A framework for tackling the problems in these areas is also presented. The third part, Contributions by members of the Technical Advisory Panel (TAP), contains ten outstanding papers contributed by members of the TAP. The first set of three papers focuses on distributed databases. The second set of three papers concentrates on information modeling

alternatives. The final set of four papers examines a range of auxiliary issues in the context of large scale, distributed, heterogeneous information systems. GRA

N88-30455# Massachusetts Inst. of Tech., Cambridge.
**KNOWLEDGE-BASED INTEGRATED INFORMATION SYSTEMS
 DEVELOPMENT METHODOLOGIES PLAN.
 KNOWLEDGE-BASED INTEGRATED INFORMATION SYSTEMS
 ENGINEERING (KBIIE) REPORT, VOLUME 2 Final Report,
 Sep. 1986 - Jan. 1988**

AMAR GUPTA, ed. and STUART MADNICK, ed. Dec. 1987
 350 p Sponsored in part by the Department of the Air Force,
 Washington, D.C.
 (Contract DTR57-85-C-00083)
 (AD-A195851; AD-E500978; MIT-KBIIE-2) Avail: NTIS HC
 A15/MF A02 CSCL 12/7

This volume describes the Integrated System Evolution Environment (IISEE) which is structured approach for the strategic planning, tactical planning, requirements definition, design, construction, implementation, and maintenance of large scale distributed, heterogeneous integrated information systems. This approach is designed to enable system developers in the Air Force and its contractor community to evolve their current systems into a unified framework. The overall goal of the IISEE thrust is to establish a structured systems development approach consisting of methodologies, methods, tools, techniques, and practices which can improve productivity of participants, and reduce cost and time required for integrated information systems development. The IISEE strategy has been designed keeping in view the objectives of the Integrated Design Support System (IDS) Program of the Air Force. The latter program encompasses all issues relating to capture, management, and communication of product technical data from its initial creation in design, through utilization in manufacture, to logistics operations. GRA

N89-10096*# National Aeronautics and Space Administration
 Ames Research Center, Moffett Field, CA.

**ADVANCED DATA MANAGEMENT DESIGN FOR
 AUTONOMOUS TELEROBOTIC SYSTEMS IN SPACE USING
 SPACEBORNE SYMBOLIC PROCESSORS**

ANDRE GOFORTH In NASA, Goddard Space Flight Center,
 Proceedings of 1987 Goddard Conference on Space Applications
 of Artificial Intelligence (AI) and Robotics 19 p 1987
 Avail: NTIS HC A99/MF E03 CSCL 09/2

The use of computers in autonomous telerobots is reaching the point where advanced distributed processing concepts and techniques are needed to support the functioning of Space Station era telerobotic systems. Three major issues that have impact on the design of data management functions in a telerobot are covered. It also presents a design concept that incorporates an intelligent systems manager (ISM) running on a spaceborne symbolic processor (SSP), to address these issues. The first issue is the support of a system-wide control architecture or control philosophy. Salient features of two candidates are presented that impose constraints on data management design. The second issue is the role of data management in terms of system integration. This refers to providing shared or coordinated data processing and storage resources to a variety of telerobotic components such as vision, mechanical sensing, real-time coordinated multiple limb and end effector control, and planning and reasoning. The third issue is hardware that supports symbolic processing in conjunction with standard data I/O and numeric processing. A SSP that currently is seen to be technologically feasible and is being developed is described and used as a baseline in the design concept. Author

N89-10672# Massachusetts Inst. of Tech., Cambridge
**OBJECT-ORIENTED APPROACH TO INTEGRATING
 DATABASE SEMANTICS. VOLUME 4 Final Report, Sep. 1986 -
 Jan. 1988**

AMAR GUPTA and STUART MADNICK Dec. 1987 298 p
 (Contract DTR57-85-C-00083)

(AD-A195853; AD-E500978; MIT-KBIIE-4) Avail: NTIS HC
 A13/MF A02 CSCL 12/7

This volume presents the idea of using an object-oriented rule-based approach to integrating database semantics. It is divided into three parts. The first part, An Actor's Role in Integrating Expert and Database Systems, presents arguments for various approaches for using expert system techniques in combination with database management systems and concludes by recommending an object-oriented approach. The second part, Interfacing Objects and Databases, describes the motivation, development, and usage of a prototype Knowledge Oriented Representation Language (KOREL) that uses an object-oriented approach for interfacing to existing database systems. KOREL is implemented in common LISP. One of the important features of KOREL is that it automatically retrieves data as needed from the underlying databases rather than snapshot the entire database. This improves performance and minimizes the impact of skew. The third part, A Knowledge-Based System for Resolving Semantic Conflicts: A Problem of Integrating Heterogeneous Database Management Systems, presents a comprehensive example of the integration of multiple databases. The application analyzed involves multiple tour guide databases which have overlapping information that is often ambiguous, contradictory, and incomplete. Various types of semantic conflicts are identified and approaches to their resolution are presented. A prototype system, based on the Knowledge Engineering Environment (KEE) software, is described. GRA

N89-11435# California Univ., San Diego, La Jolla.
**THREE-DIMENSIONAL COMPUTER GRAPHICS
 BRAIN-MAPPING PROJECT Final Report, 10 Mar. - 24 Dec.
 1987**

ROBERT B. LIVINGSTON 24 Mar. 1988 151 p
 (Contract DAMD17-86-C-6093)

(AD-A197053) Avail: NTIS HC A08/MF A01 CSCL 06/4

A core group was assembled at UCSD and the Scripps Clinic and Research Foundation, which, together with participating national advisors, could solve problems that stand in the way of engaging computer graphics and database management more effectively in the solution of neurosciences problems. We aimed at improving the interface between neuroanatomy and computer graphics systems so that the groundwork for accurate quantitative morphology will be satisfactory from the neurosciences viewpoint in proceeding to achieve whole brain reconstructions. We have succeeded in developing sound methods for prepping whole brains for sectioning and microscopic analysis, with controls for reducing brain distortions in three dimensions and for correcting the inevitable distortions that accompany slicing brain tissue at microscopic intervals, for combining structure/function data, and for beginning an analysis of whole brain tissue sections at microscopic levels of detail. GRA

N89-12294# Syracuse Univ., NY. Electrical and Computer
 Engineering.

**COMPUTER ARCHITECTURES FOR VERY LARGE
 KNOWLEDGE BASES**

P. BRUCE BERRA In its Northeast Artificial Intelligence
 Consortium (NAIC) Review of Technical Tasks, Volume 2, Part 2
 p 835-851 Jul. 1987

Avail: NTIS HC A21/MF A03 CSCL 09/2

The current state of the art in knowledge based expert systems is such that the intensional database (IDB) of rules and the extensional database of facts (EDB) are small and main memory resident. The goal of this research is to develop innovative computer architectures that efficiently manage very large knowledge bases in a real time environment. There are many ways to represent knowledge in an expert system. A logic programming framework was chosen because of its strong mathematical foundation, its commonality with relational data base management, prior and current Prolog and MetaProlog work and the potential for making significant improvements in the performance of logic programs through the exploitation of search parallelism. A description is provided of the partial match retrieval problem that results when one seeks to retrieve facts from EDB. The approach to the

improvement of the performance of the partial match retrieval problem is then discussed along with an initial computer architecture
Author

N89-12295# Syracuse Univ., NY Logic Programming Research Group.

KNOWLEDGE BASE MAINTENANCE USING LOGIC PROGRAMMING METHODOLOGIES

KENNETH A. BOWEN *In its* Northeast Artificial Intelligence Consortium (NAIC) Review of Technical Tasks, Volume 2, Part 2 p 853-858 Jul. 1987

Avail. NTIS HC A21/MF A03 CSCL 09/2

The development of extensions of the logic programming language Prolog which are suitable for application to the problem of maintaining consistency and logical structure for large dynamic knowledge bases is discussed. The logical representation of the assertions of a knowledge base is to identify them with the facts and rules of the logic programming language. So-called metalevel extensions of Prolog are being developed. The metalevel extensions have the character that logical concepts which are implicit in Prolog systems are made explicit in the extension. In particular, theories which are only implicit in Prolog, become explicit first-class objects capable of being the values of variables and of being dynamically constructed and modified in a logical manner. While the immediate motivation for the refutation of theories was the representation of change in knowledge bases, a pleasant side-effect is the ability to clearly implement a number of classical artificial intelligence knowledge representation schemes such as frames and semantic nets. A similar approach is being taken to the problem of control.
Author

N89-13188# Colgate Univ., Hamilton, NY

PLANNER SYSTEM FOR THE APPLICATION OF INDICATIONS AND WARNING

SERGEI NIRENBURG *In* Syracuse Univ., N.Y. Northeast Artificial Intelligence Consortium (NAIC) Review of Technical Tasks, Volume 2, Part 1 p 277-326 Jul. 1987

Avail. NTIS HC A21/MF A03 CSCL 09/2

A planner system for the application of indications and warning (A and I) is designed. The task of the project is two-pronged: obtain as input messages concerning events in a model of a real-life subworld, understand these events by detecting what plans they are part of and, whenever applicable, what goals are pursued, and produce (suggestion for possible) plans of action necessary in connection with the situation in the world.
Author

N89-13191# Massachusetts Univ., Amherst Dept. of Computer and Information Science.

PLAN RECOGNITION, KNOWLEDGE ACQUISITION AND EXPLANATION IN AN INTELLIGENT INTERFACE Year End Report, 1984 - 1985

VICTOR LESSER, W. BRUCE CROFT, and BEVERLY WOOLF *In* Syracuse Univ., N.Y. Northeast Artificial Intelligence Consortium (NAIC). Review of Technical Tasks, Volume 2, Part 1 p 375-466 Jul. 1987

Avail. NTIS HC A21/MF A03 CSCL 09/2

The primary focus was to support users in their interactions with an intelligent database and with each other, in a case of a distributed interface. The research effort has two complementary aims: development of a planner, plan recognizer, and associated database that knows about the user tasks and can begin to automate execution of the tasks, and development of intelligent interface tools, such as natural language parsers and generators, and graphics facilities, to increase a user's ability to interact with the system. Both efforts are directed at enabling a machine to provide assistance to a user while describing its own actions and decisions. The achievements for fiscal year 1984 to 1985 are outlined.
Author

N89-13915# Harvard Univ., Cambridge, MA

ARTIFICIAL INTELLIGENCE TECHNIQUES FOR RETROSPECTIVE HELP IN DATA ANALYSIS

WILLIAM H. NUGENT *In* Colorado State Univ., Computer Science

and Statistics Proceedings of the 18th Symposium on the Interface p 118-121 26 Aug. 1987 Sponsored in part by ONR, Washington, DC

Avail. NTIS HC A20/MF A03 CSCL 12/6

A tool is presented which has been developed to address the meta problem of script analysis - the determining of the definitions and interdependencies of commands and variables. This is a natural area to automate for three reasons. (1) searching through a script to find a variable or command reference is a tedious process, (2) an analyst makes mistakes when searching manually through the script, and (3) researchers have proven A.I. technology which can be applied to this problem.
Author

N89-14709# Sandia National Lab., Albuquerque, NM THE NC (NUMERICALLY CONTROLLED) ASSISTANT: INTERFACING KNOWLEDGE BASED MANUFACTURING TOOLS TO CAO/CAM SYSTEMS

W. C. BURD 1988 34 p Presented at the CIM SUBWOG 39E Meeting, Cardiff, United Kingdom, 6 Oct. 1986 (Contract DE-AC04-76DP-00789)

(DE88-016742, SAND-88-2089C, CONF-8610203-2) Avail. NTIS HC A03/MF A01

A knowledge based computer program that assists programmers of numerically controlled (NC) machine tools is described. The program uses part features identified by the NC programmer and a set of expert system manufacturing rules to select cutting parameters and produce NC part programs. An expert system shell determines the NC sequence and the machining parameters. Several point-to-point NC functions are currently in production. A CAD/CAM system interface for milling and turning functions is also described.
DOE

N89-14768# FMC Corp., Santa Clara, CA Central Engineering Labs

SYSTEM INTEGRATION OF KNOWLEDGE-BASED MAINTENANCE AIDS

CHRISTOPHER A. POWELL, CYNTHIA K. PICKERING, and KEITH T. WESCOURT *In* Colorado Univ., Proceedings of the Air Force Workshop on Artificial Intelligence Applications for Integrated Diagnostics p 440-451 Jul. 1987 Submitted for publication

Avail. NTIS HC A23/MF A03 CSCL 12/9

There are many examples of knowledge-based fault diagnosis advisors for corrective maintenance of complex equipment. However, such advisors are only part of an overall maintenance solution. To be used effectively, diagnostic advisors must be integrated with other existing and forthcoming systems, such as Automated Test Equipment and maintenance databases. Successful fielding of knowledge-based systems requires consideration of integration issues throughout the design process.
Author

N89-14957*# University of Southwestern Louisiana, Lafayette Center for Advanced Computer Studies

KNOWLEDGE BASED SYSTEMS: A CRITICAL SURVEY OF MAJOR CONCEPTS, ISSUES, AND TECHNIQUES M.S. Thesis Final Report, 1 Jul. 1985 - 31 Dec. 1987

WAYNE D. DOMINICK, ed. and SRINU KAVI 11 Dec. 1984 324 p Prepared in cooperation with Southern Univ., Baton Rouge, LA

(Contract NASW-3846, NGT-19-010-900)

(NASA-CR-184517, NAS 1 26 184517, DBMS NASA/RECON-9)

Avail. NTIS HC A14/MF A02 CSCL 05/2

This Working Paper Series entry presents a detailed survey of knowledge based systems. After being in a relatively dormant state for many years, only recently is Artificial Intelligence (AI) - that branch of computer science that attempts to have machines emulate intelligent behavior - accomplishing practical results. Most of these results can be attributed to the design and use of Knowledge-Based Systems, KBSs (or expert systems) - problem solving computer programs that can reach a level of performance comparable to that of a human expert in some specialized problem domain. These systems can act as a consultant for various requirements like medical diagnosis, military threat analysis, project

nsk assessment, etc. These systems possess knowledge to enable them to make intelligent decisions. They are, however, not meant to replace the human specialists in any particular domain. A critical survey of recent work in interactive KBSs is reported. A case study (MYCIN) of a KBS, a list of existing KBSs, and an introduction to the Japanese Fifth Generation Computer Project are provided as appendices. Finally, an extensive set of KBS-related references is provided at the end of the report. Author

N89-14958*# University of Southwestern Louisiana, Lafayette. Center for Advanced Computer Studies.

KNOWLEDGE BASED SYSTEMS: A CRITICAL SURVEY OF MAJOR CONCEPTS, ISSUES AND TECHNIQUES. VISUALS

Final Report, 1 Jul. 1985 - 31 Dec. 1987

WAYNE D. DOMINICK, ed. and SRINU KAVI 11 Dec. 1984 67 p Prepared in cooperation with Southern Univ., Baton Rouge, LA

(Contract NASW-3846; NGT-19-010-900) (NASA-CR-184518; NAS 1.26:184518; DBMS.NASA/RECON-10) Avail: NTIS HC A04/MF A01 CSCL 05/2

This Working Paper Series entry represents a collection of presentation visuals associated with the companion report entitled, Knowledge Based Systems: A Critical Survey of Major Concepts, Issues, and Techniques, USL/DBMS NASA/RECON Working Paper Series report number DBMS.NASA/RECON-9. The objectives of the report are to: examine various techniques used to build the KBS; to examine at least one KBS in detail, i.e., a case study; to list and identify limitations and problems with the KBS; to suggest future areas of research; and to provide extensive reference materials. Author

N89-14969*# University of Southwestern Louisiana, Lafayette. Center for Advanced Computer Studies.

KARL: A KNOWLEDGE-ASSISTED RETRIEVAL LANGUAGE M.S. Thesis Final Report, 1 Jul. 1985 - 31 Dec. 1987

WAYNE D. DOMINICK, ed. and SPIROSTRIANTAFYLLOPOULOS 31 Oct. 1985 158 p prepared in cooperation with Southern Univ., Baton Rouge, LA

(Contract NASW-3846; NGT-19-010-900) (NASA-CR-184529; NAS 1.26:184529; DBMS.NASA/RECON-21) Avail: NTIS HC A08/MF A01 CSCL 05/2

Data classification and storage are tasks typically performed by application specialists. In contrast, information users are primarily non-computer specialists who use information in their decision-making and other activities. Interaction efficiency between such users and the computer is often reduced by machine requirements and resulting user reluctance to use the system. This thesis examines the problems associated with information retrieval for non-computer specialist users, and proposes a method for communicating in restricted English that uses knowledge of the entities involved, relationships between entities, and basic English language syntax and semantics to translate the user requests into formal queries. The proposed method includes an intelligent dictionary, syntax and semantic ventiers, and a formal query generator. In addition, the proposed system has a learning capability that can improve portability and performance. With the increasing demand for efficient human-machine communication, the significance of this thesis becomes apparent. As human resources become more valuable, software systems that will assist in improving the human-machine interface will be needed and research addressing new solutions will be of utmost importance. This thesis presents an initial design and implementation as a foundation for further research and development into the emerging field of natural language database query systems. Author

N89-15559*# Alabama A & M Univ., Huntsville. Dept of Computer and Information Science.

PLANNING ACTIONS IN ROBOT AUTOMATED OPERATIONS

A. DAS In NASA, Marshall Space Flight Center, Fourth Conference on Artificial Intelligence for Space Applications p 69-74 Oct. 1988

Avail: NTIS HC A21/MF A03 CSCL 09/2

Action planning in robot automated operations requires

intelligent task level programming. Invoking intelligence necessitates a typical blackboard based architecture, where, a plan is a vector between the start frame and the goal frame. This vector is composed of partially ordered bases. A partial ordering of bases presents good and bad sides in action planning. Partial ordering demands the use of a temporal data base management system. Author

N89-15574*# Martin Manetta Aerospace, New Orleans, LA. Manned Space Systems.

CASE-BASED REASONING: THE MARRIAGE OF KNOWLEDGE BASE AND DATA BASE

KIRT PULASKI and CYPRIAN CASADABAN In NASA, Marshall Space Flight Center, Fourth Conference on Artificial Intelligence for Space Applications p 183-190 Oct. 1988

Avail: NTIS HC A21/MF A03 CSCL 05/2

The coupling of data and knowledge has a synergistic effect when building an intelligent data base. The goal is to integrate the data and knowledge almost to the point of indistinguishability, permitting them to be used interchangeably. Examples given in this paper suggest that Case-Based Reasoning is a more integrated way to link data and knowledge than pure rule-based reasoning. Author

N89-15585*# Prospective Computer Analysts, Inc., Arlington, VA.

AUTOMATED KNOWLEDGE BASE DEVELOPMENT FROM CAD/CAE DATABASES

R. GLENN WRIGHT and MARY BLANCHARD In NASA, Marshall Space Flight Center, Fourth Conference on Artificial Intelligence for Space Applications p 253-260 Oct. 1988

Avail: NTIS HC A21/MF A03 CSCL 05/2

Knowledge base development requires a substantial investment in time, money, and resources in order to capture the knowledge and information necessary for anything other than trivial applications. This paper addresses a means to integrate the design and knowledge base development process through automated knowledge base development from CAD/CAE databases and files. Benefits of this approach include the development of a more efficient means of knowledge engineering, resulting in the timely creation of large knowledge based systems that are inherently free of error. Author

N89-15607*# Aerospace Corp., Los Angeles, CA. Space Sciences Lab.

SPACECRAFT ENVIRONMENTAL ANOMALIES EXPERT SYSTEM

H. C. KOONS and D. J. GORNEY In NASA, Marshall Space Flight Center, Fourth Conference on Artificial Intelligence for Space Applications p 457-465 Oct. 1988

Avail: NTIS HC A21/MF A03 CSCL 22/2

A microcomputer-based expert system is being developed at the Aerospace Corporation Space Sciences Laboratory to assist in the diagnosis of satellite anomalies caused by the space environment. The expert system is designed to address anomalies caused by surface charging, bulk charging, single event effects and total radiation dose. These effects depend on the orbit of the satellite, the local environment (which is highly variable), the satellite exposure time and the hardness of the circuits and components of the satellite. The expert system is a rule-based system that uses the Texas Instruments Personal Consultant Plus expert system shell. The completed expert system knowledge base will include 150 to 200 rules, as well as a spacecraft attributes database, an historical spacecraft anomalies database, and a space environment database which is updated in near real-time. Currently, the expert system is undergoing development and testing within the Aerospace Corporation Space Sciences Laboratory. Author

N89-16368*# Houston Univ., Clear Lake, TX.

RDESIGN: A DATA DICTIONARY WITH RELATIONAL DATABASE DESIGN CAPABILITIES IN ADA

ANTHONY A. LEKKOS and TERESA TING-YIN KWOK In NASA, Lyndon B. Johnson Space Center, First International Conference

AI, EXPERT SYSTEMS, AND KNOWLEDGE SYSTEMS

on Ada (R) Programming Language Applications for the NASA Space Station, Volume 2 / p 1986
Avail: NTIS HC A22/MF A03 CSDL 09/2

Data Dictionary is defined to be the set of all data attributes, which describe data objects in terms of their intrinsic attributes, such as name, type, size, format and definition. It is recognized as the data base for the Information Resource Management, to facilitate understanding and communication about the relationship between systems applications and systems data usage and to help assist in achieving data independence by permitting systems applications to access data knowledge of the location or storage characteristics of the data in the system. A research and development effort to use Ada has produced a data dictionary with data base design capabilities. This project supports data specification and analysis and offers a choice of the relational, network, and hierarchical model for logical data based design. It provides a highly integrated set of analysis and design transformation tools which range from templates for data element definition, spreadsheet for defining functional dependencies, normalization, to logical design generator. Author

N89-16400# National Academy of Sciences - National Research Council, Washington, DC.

PROCEEDINGS OF THE WORKSHOP ON AI (ARTIFICIAL INTELLIGENCE), AND DISTRIBUTED PROBLEM SOLVING

May 1985 174 p Workshop held at Washington, DC, 16-17 May 1985 Prepared for ONR, Arlington, VA
(PB88-224852) Avail: NTIS HC A08/MF A01 CSDL 09/2

Several topics in artificial intelligence are discussed. Military needs, distributed problem solving and reasoning, and information fusion are discussed.

N89-19123# Martingale Research Corp., Allen, TX.
BIOMASSCOMP: ARTIFICIAL NEURAL NETWORKS AND NEUROCOMPUTERS Final Report, 18 Aug. 1987 - 18 Feb. 1988

ROBERT L. DAWES Sep. 1988 196 p
(Contract F33615-87-C-1491)
(AD-A200902; MRC-WPAFB-88-001; AFWAL-TR-88-1076) Avail.
NTIS HC A09/MF A02 CSDL 23/3

BIOMASSCOMP is a project whose objective is to define and develop methods for automating the process of reverse engineering the brain for application to the development of intelligent sensors and controllers for avionic and other systems. Concepts which many neural network and cognitive researchers have assumed to work in self-organizing systems are quantified and applied. During this Phase 1 SBIR project, an entropy-based scalar measure, DMORPH, of the common structure between two systems, as evidenced by measurement of signals from the two systems, have been defined, developed, and implemented. By design, DMORPH reflects only the crosscorrelations between systems and not the intracorrelations within the separate systems. DMORPH was applied to the input and output signals from various artificial neural network architectures to attempt to determine which networks, and which parameter settings within each, induced the greatest structural similarity between input and output signals after learning had taken place. This research applies to the development and testing of real time autonomous learning systems suitable for application to problems of avionics sensor fusion, adaptive sensor processing, and intelligent resource management. GRA

N89-19841# Mitre Corp., McLean, VA. Artificial Intelligence Technical Center.

AN ARCHITECTURE FOR INTEGRATING DISTRIBUTED AND COOPERATING KNOWLEDGE-BASED AIR FORCE DECISION AIDS

RICHARD O. NUGENT and RICHARD W. TUCKER In NASA Lyndon B. Johnson Space Center, 2nd Annual Workshop on Space Operations Automation and Robotics (SOAR 1988) p 171-175 Nov. 1988

(Contract F19628-86-C-0001)
Avail NTIS HC A22/MF A04 CSDL 09/2

MITRE has been developing a Knowledge-Based Battle

Management Testbed for evaluating the viability of integrating independently-developed knowledge-based decision aids in the Air Force tactical domain. The primary goal for the testbed architecture is to permit a new system to be added to a testbed with little change to the system's software. Each system that connects to the testbed network declares that it can provide a number of services to other systems. When a system wants to use another system's service, it does not address the server system by name, but instead transmits a request to the testbed network asking for a particular service to be performed. A key component of the testbed architecture is a common database which uses a relational database management system (RDBMS). The RDBMS provides a database update notification service to requesting systems. Normally, each system is expected to monitor data relations of interest to it. Alternatively, a system may broadcast an announcement message to inform other systems that an event of potential interest has occurred. Current research is aimed at dealing with issues resulting from integration efforts, such as dealing with potential mismatches of each system's assumptions about the common database, decentralizing network control, and coordinating multiple agents. Author

N89-20285# Rice Univ., Houston, TX. Dept. of Chemical Engineering.

AN EXPERT SYSTEM BASED INTELLIGENT CONTROL SCHEME FOR SPACE BIOREACTORS

KA-YIU SAN In NASA, Washington, Microgravity Science and Applications Flight Programs, January - March 1987, Selected Papers, Volume 1 p 159-162 Oct. 1988
Avail: NTIS HC A21/MF A03 CSDL 22/1

An expert system based intelligent control scheme is being developed for the effective control and full automation of bioreactor systems in space. The scheme developed will have the capability to capture information from various resources including heuristic information from process researchers and operators. The knowledge base of the expert system should contain enough expertise to perform on-line system identification and thus be able to adapt the controllers accordingly with minimal human supervision. Author

N89-20574# Los Alamos National Lab., NM. Computing and Communications Div.

APPLYING EXPERTISE TO DATA IN THE GEOLOGIST'S ASSISTANT EXPERT SYSTEM

K. P. BERKBIGLER, G. J. PAPCUN, N. L. MARUSAK, and J. E. HUTSON 1988 9 p Presented at the 3rd Topical Meeting on Robotics and Remote Systems, Charleston, SC, 13 Mar. 1989
(Contract W-7405-ENG-36)
(DE89-003463; LA-UR-88-3750; CONF-890304-12) Avail: NTIS HC A02/MF A01

The Geologist's Assistant combines expert system technology with numerical pattern-matching and online communication to a large database. This paper discusses the types of rules used for the expert system, the pattern-matching technique applied, and the implementation of the system using a commercial expert system: development environment. DOE

N89-20694# National Aeronautics and Space Administration. Lyndon B. Johnson Space Center, Houston, TX.

USE OF ARTIFICIAL INTELLIGENCE IN SUPERVISORY CONTROL

AARON COHEN and JON D. ERICKSON In Georgia Inst. of Tech., Human-Computer Interaction in Distributed Supervisory Control Tasks 48 p Jan. 1989
Avail: NTIS HC A08/MF A01 CSDL 09/2

Viewgraphs describing the design and testing of an intelligent decision support system called OFMspert are presented. In this expert system, knowledge about the human operator is represented through an operator/system model referred to as the OFM (Operator Function Model). OFMspert uses the blackboard model of problem solving to maintain a dynamic representation of operator goals, plans, tasks, and actions given previous operator actions and current system state. Results of an experiment to assess

OFMSPert's intent inferencing capability are outlined. Finally, the overall design philosophy for an intelligent tutoring system (OFMTutor) for operators of complex dynamic systems is summarized. M.G.

N89-23132# SRI International Corp., Menlo Park, CA Artificial Intelligence Center.

CORE KNOWLEDGE SYSTEM: STORAGE AND RETRIEVAL OF INCONSISTENT INFORMATION

THOMAS M. STRAT and GRAHAME B. SMITH *In Science Applications International Corp., Proceedings: Image Understanding Workshop, Volume 2 p 660-665 Apr. 1988*
 Avail: NTIS HC A99/MF E03 CSCL 05/2

An information storage and retrieval mechanism that avoids the requirement of consistency maintenance imposed by tradition knowledge-based systems is described. By viewing data as opinions rather than facts, the system is able to combine knowledge that is generally accepted as being true with data that may be from unreliable sources. A formal account of the semantics of the approach is also given. The information management system described has been implemented and used to store information derived from image processing along with opinions from other sources about objects in the visible world. It appears to be well suited for the requirements of an autonomous robot, and for information storage in general. Author

N89-24070# TRW Defense Systems Group, Fairfax, VA. Systems Div.

ADVANCED COMPUTING SYSTEMS: AN ADVANCED REASONING-BASED DEVELOPMENT PARADIGM FOR ADA TRUSTED SYSTEMS AND ITS APPLICATION TO MACH

Quarterly Status Report, No. 1, 28 Nov. 1988 - 28 Feb. 1989
 15 Mar. 1989 95 p

(Contract MDA972-89-C-0029, ARPA ORDER 6414)
 (AD-A266308) Avail: NTIS HC A05/MF A01 CSCL 12/7

Objectives and basis of the process model; motivations (drivers) and constraints of the process model; an overview of primary tasks; issues; elements of the process model, and process model in the lifecycle are discussed. GRA

N89-24226# Naval Postgraduate School, Monterey, CA
A PROGRAM INTERFACE PROTOTYPE FOR A MULTIMEDIA DATABASE INCORPORATING IMAGES M.S. Thesis

CATHY A. THOMAS Dec. 1988 120 p
 (AD-A206439) Avail: NTIS HC A06/MF A01 CSCL 12/5

This thesis represents one aspect of an exploration of the integration of unformatted data types, such as image, sound and signal, with more conventional formatted types in a single database. The focus of this thesis is the implementation of a prototype of a database employing a relational model that incorporates both formatted and unformatted data types. Initial research was limited to integration of image data. The prototype provides storage and retrieval capabilities, as well as a modest query handling capability. GRA

N89-24847# Martin Manetta Labs., Baltimore, MD Artificial Intelligence Group.

ON DESIGNING A CASE-BASED SYSTEM FOR EXPERT PROCESS DEVELOPMENT Abstract Only

SERAJ BHARWANI, J. T. WALLS, and M. E. JACKSON *In Tactical Weapons Guidance and Control Information Conference on Space and Military Applications of Automation and Robotics p 55-57 Jun. 1988* Prepared in cooperation with Martin Manetta Corp., Huntsville, AL
 Avail: NTIS HC A05/MF A01 CSCL 09/2

In artificial intelligence literature, using prior experience to help solve new problem situations is termed case-based reasoning. Using case-based reasoning was proposed for learning new concepts in mathematics, for clinical problem solving, for settling legal issues based on common law, and for interpreting and resolving common sense disputes. The need for such reasoning in performing process development tasks was discussed. In particular, the significance of compiling case histories to capture

critical process knowledge and the methods of compiling and reasoning with such histories to reduce process development time and enhance its reliability were described. This approach is especially useful in situations where existing processes are modified in response to frequent product changes or when processes developed for a prototype operation have to be ported to production systems. Author

N89-25774# Oak Ridge National Lab., TN Information Research and Analysis.

AN EXPERT SYSTEM TO FACILITATE SELECTING A DATABASE MANAGEMENT SYSTEM

L. M. ROSEBERRY and D. C. KILGORE Jun. 1989 7 p
 Presented at the DOE Technical Information Meeting INFOTECH, Oak Ridge, TN, 6 Jun. 1989
 (Contract DE-AC05-84OR-21400)

(DE89-012350, CONF-8906113-2) Avail: NTIS HC A02/MF A01
 An investigation has been initiated to develop an expert system to assist information professionals in selecting a database management system (DBMS). The system attempts to consider DBMS basic design, theory, and performance standard as well as the specific needs of the project. The user is queried for needs, wants, and resource restrictions. The inference engine tests these data against its rule set and generates prioritized recommendations. The rule set design will be discussed. The usefulness of such a tool will be discussed as well as plans for its continued evolution. DOE

N89-26578# National Aeronautics and Space Administration, Goddard Space Flight Center, Greenbelt, MD.

THE 1989 GODDARD CONFERENCE ON SPACE APPLICATIONS OF ARTIFICIAL INTELLIGENCE

JAMES RASH, ed. Washington Apr. 1989 385 p Conference held in Greenbelt, MD, 16-17 May 1989
 (NASA-CP-3033, REPT-89B00099, NAS 1.55 3033) Avail: NTIS HC A17/MF A03 CSCL 09/2

The following topics are addressed: mission operations support; planning and scheduling, fault isolation/diagnosis, image processing and machine vision, data management, and modeling and simulation.

N89-26599# National Aeronautics and Space Administration, Goddard Space Flight Center, Greenbelt, MD.

THE UTILIZATION OF NEURAL NETS IN POPULATING AN OBJECT-ORIENTED DATABASE

WILLIAM J. CAMPBELL, SCOTT E. HILL, and ROBERT F. CHOMP *In its The 1989 Goddard Conference on Space Applications of Artificial Intelligence p 249-263 Apr. 1989*
 Avail: NTIS HC A17/MF A03 CSCL 09/2

Existing NASA supported scientific data bases are usually developed, managed and populated in a tedious, error prone and self-limiting way in terms of what can be described in a relational Data Base Management System (DBMS). The next generation Earth remote sensing platforms (i.e., Earth Observation System, (EOS), will be capable of generating data at a rate of over 300 Mbs per second from a suite of instruments designed for different applications. What is needed is an innovative approach that creates object-oriented databases that segment, characterize, catalog and are manageable in a domain-specific context and whose contents are available interactively and in near-real-time to the user community. Described here is work in progress that utilizes an artificial neural net approach to characterize satellite imagery of undefined objects into high-level data objects. The characterized data is then dynamically allocated to an object-oriented data base where it can be reviewed and assessed by a user. The definition, development, and evolution of the overall data system model are steps in the creation of an application-driven knowledge-based scientific information system. Author

N89-26600* # Martin Marietta Corp., Denver, CO Information and Communications Systems.

A RAPID PROTOTYPING/ARTIFICIAL INTELLIGENCE APPROACH TO SPACE STATION-ERA INFORMATION MANAGEMENT AND ACCESS

RICHARD S. CARNAHAN, JR., STEPHEN M. COREY, and JOHN B. SNOW. In NASA, Goddard Space Flight Center. The 1989 Goddard Conference on Space Applications of Artificial Intelligence p 265-279 Apr 1989

Avail: NTIS HC A17/MF A03 CSCL 09/2

Applications of rapid prototyping and Artificial Intelligence techniques to problems associated with Space Station-era information management systems are described. In particular, the work is centered on issues related to (1) intelligent man-machine interfaces applied to scientific data user support, and (2) the requirement that intelligent information management systems (IIMS) be able to efficiently process metadata updates concerning types of data handled. The advanced IIMS represents functional capabilities driven almost entirely by the needs of potential users. Space Station-era scientific data projected to be generated is likely to be significantly greater than data currently processed and analyzed. Information about scientific data must be presented clearly, concisely, and with support features to allow users at all levels of expertise efficient and cost-effective data access. Additionally, mechanisms for allowing more efficient IIMS metadata update processes must be addressed. The work reported covers the following IIMS design aspects: IIMS data and metadata modeling, including the automatic updating of IIMS-contained metadata, IIMS user-system interface considerations, including significant problems associated with remote access, user profiles, and on-line tutorial capabilities, and development of an IIMS query and browse facility, including the capability to deal with spatial information. A working prototype has been developed and is being enhanced.

Author

THE HUMAN INTERFACE

As applied by IBM, hardware and software comprising current information technology is run by people trying to make it do what they want done. And of course people themselves are major information resources. Balancing people and technology is a major concern - the management of information resources.

A84-19282

FLIGHT STATIONS AND OFFICES OF THE FUTURE - HOW SIMILAR WILL THEY BE

R. L. WASSON (Sperry Corp., Blue Bell, PA). IN Human Factors Society, Annual Meeting, 27th, Norfolk, VA, October 10-14, 1983. Proceedings Volume 1 Santa Monica, CA. Human Factors Society, 1983, p 85-88

Copyright

Information creation and management are starting to become the major task elements for both the office worker and the pilot. The computer technology which is enabling this will not only improve performance but will lead to greater user satisfaction. Research has been ongoing in both of these work environments. Human factors personnel engaged in either area can benefit from an increased sharing of their respective achievements.

Author

A84-32429

THE MAN-MACHINE INTERFACE IN COMPUTERIZED TELEMETRY SYSTEMS

T. F. REBER (New Mexico State University, Las Cruces, NM). IN ITC/USA '82, Proceedings of the International Telemetry Conference, San Diego, CA, September 28-30, 1982. Research Triangle Park, NC. Instrument Society of America, 1982, p 527-531

Copyright

A friendly menu-driven computer interface has been developed

for a telemetry ground station to simplify the process of data retrieval. The interface consists of software designed to present telemetry system options to an operator for selection. The options are displayed on the operator's CRT in telemetry language to allow telemetry operators to configure the equipment setup and the data processing parameters. Once the configuration has been defined, the system can be configured quickly and precisely by the computer software. Changes in the setup or data processing configuration can be made by the operator without the help of skilled programmers.

V L

A84-44671

COMPUTER SOFTWARE FOR WORKING WITH LANGUAGE

T. WINOGRAD (Stanford University, Stanford, CA). Scientific American (ISSN 0037-8733), vol 251, Sept 1984, p 130-131, 135 (7 ff).

Copyright

Investigators are developing unified theories of computation which embrace both natural and artificial languages. Attention is presently given to the characteristics of natural language programs which attempt to work with word meanings, and with the difficulties arising from the ambiguity of human languages. The forms that ambiguity can take encompass: (1) the lexical, where a given word has more than one meaning; (2) structural ambiguity, in which a given sentence has two possible grammatical structures; (3) 'deep structure' ambiguity, in which two readings of a sentence have the same apparent grammatical structure but different meanings; (4) semantic ambiguity, by means of which a phrase can play different roles in the overall meaning of a sentence; and (5) pragmatic ambiguity, arising from the use of pronouns and special nouns such as 'one' and 'another'. The key problems in designing word processing software center on issues of representation and interaction, where the latter devises data structures that can be manipulated by software and the latter decides how the user expresses instructions and the manner in which the system responds.

O C

A84-44751

THE FLIGHT SERVICE AUTOMATION SYSTEM

J. T. REHMANN (FAA, Technical Center, Atlantic City, NJ). IN Air Traffic Control Association, Annual Fall Conference, 27th, Atlantic City, NJ, October 18-21, 1982. Proceedings Arlington, VA, Air Traffic Control Association, 1982, p 307-312

Copyright

Results of an evaluation of selected functions of the Flight Service Automation System (FSAS), Model 2, are presented. The FSAS provides a means of rapid information retrieval as well as continuously updated graphics and radar products. Flight and weather data are processed and stored in computers for immediate call-up on CRT displays. The evaluation, which has been performed in the laboratory under conditions closely simulating actual operation conditions, has prompted changes to several messages to improve their effectiveness. The advantages of the evaluations of this kind are discussed, with particular attention given to data distribution and optimal human factor design.

V L

A85-17865* # National Aeronautics and Space Administration Langley Research Center, Hampton, VA

AN ADVANCED MEDIA INTERFACE FOR CONTROL OF MODERN TRANSPORT AIRCRAFT NAVIGATIONAL SYSTEMS

D. R. JONES, R. V. PARRISH, L. H. PERSON, JR. (NASA, Langley Research Center, Hampton, VA) and J. L. OLD (Research Triangle Institute, Research Triangle Park, NC). IN Digital Avionics Systems Conference, 6th, Baltimore, MD, December 3-6, 1984. Proceedings New York. American Institute of Aeronautics and Astronautics, 1984, p 421-428 refs

(AIAA PAPER 84-2686)

With the advent of digital avionics, the workload of the pilot in a modern transport aircraft is increasing significantly. This situation makes it necessary to reduce pilot workload with the aid of new advanced technologies. As part of an effort to improve information management systems, NASA has, therefore, studied an advanced concept for managing the navigational tasks of a modern transport

aircraft. This concept is mainly concerned with the simplification of the pilot interface. The advanced navigational system provides a simple method for a pilot to enter new waypoints to change his flight plan because of heavy traffic, adverse weather conditions, or other reasons. The navigational system was implemented and evaluated in a flight simulator representative of a modern transport aircraft. Attention is given to the simulator, flight simulation, multimode devices, and the navigational system. G R.

A85-43401

AN APPROACH TO USER SPECIFICATION OF INTERACTIVE DISPLAY INTERFACES

L. J. BASS (Rhode Island University, Kingston) IEEE Transactions on Software Engineering (ISSN 0098-5589), vol. SE-11, Aug 1985, p. 686-698 refs
Copyright

The interaction of the end user of a database system with a computer terminal typically is related to the examination, input, modification, or analysis of the data. General purpose techniques have been developed to assist in the management of the user interface. There are dialog systems, general screen systems, and form managers. The integration of the form concept into dialog systems and the use of forms by arbitrary application programs has been inhibited by the unitary nature of forms. This paper presents a form as the realization of a collection of components. These components are connected by means of logic which is a portion of the form specification. Higher level constructs such as repeated fields and aggregation are handled through a hierarchy of the form components. Attention is given to the example of a report, aspects of grouping, the theory of the display system, theoretical considerations, screen management, operators, and problems of implementation G R.

A86-21889

INTELLIGENT INTERFACES FOR HUMAN CONTROL OF ADVANCED AUTOMATION AND SMART SYSTEMS

A. M. MADNI and A. FREEDY (Perceptronics, Inc., Woodland Hills, CA) IN: EASCON '84; Proceedings of the Seventeenth Annual Electronics and Aerospace Conference, Washington, DC, September 10-12, 1984. New York, Institute of Electrical and Electronics Engineers, 1984, p. 227-232. refs
Copyright

Today, an important part of robotics research is directed toward the development of intelligent systems which are capable of performing and/or cooperating with the human operator in some of the higher level cognitive functions. The present paper is concerned with the need to incorporate an 'Intelligent Interface' (II) in the considered systems. It is the objective of the II to maximize the performance of an operator-robot system for a given degree of intelligence of the robot and a given level of operator capability. Attention is given to the specific goals of the II, its design architecture, information management aids, tailored feedback, high-level command and query languages, explanation facility, operator-robot task allocation, personalized responses, task performance monitoring and contingency handling, and default responses in structured situations. G R.

A86-23740

EXAMINE - AN EXPERT SYSTEM TO MEDIATE HUMAN-COMPUTER DIALOGS

R. J. PETERSEN, T. HESTER, and J. P. YORCHAK (Martin Marietta Corp., Denver, CO) IN: Human Factors Society, Annual Meeting, 28th, San Antonio, TX, October 22-26, 1984, Proceedings, Volume 2. Santa Monica, CA, Human Factors Society, 1984, p. 889-893 refs
Copyright

An Expertly Assisted Man-machine Interface for Network Environments (EXAMINE) will assist users of large heterogeneous database networks. EXAMINE is specified to be a layered man-computer interface. Due to the requirement that the system must be adaptive to the user and the context derived from the user's information environment, expert system technology is being applied. This paper describes the user's problems in using

distributed heterogeneous database networks and some of the details of EXAMINE functionality to solve these problems

Author

A86-26011* Arizona State Univ., Tempe.

SUBJECTIVE WORKLOAD AND INDIVIDUAL DIFFERENCES IN INFORMATION PROCESSING ABILITIES

D. L. DAMOS (Arizona State University, Tempe) IN Aerospace Behavioral Engineering Technology Conference, 3rd, Long Beach, CA, October 15-18, 1984, Proceedings. Warrendale, PA, Society of Automotive Engineers, Inc., 1984, p. 71-74 refs
(Contract NCC2-202)
(SAE PAPER 841491) Copyright

This paper describes several experiments examining the source of individual differences in the experience of mental workload. Three sources of such differences were examined: information processing abilities, timesharing abilities, and personality traits/behavior patterns. On the whole, there was little evidence that individual differences in information processing abilities or timesharing abilities are related to perceived differences in mental workload. However, individuals with strong Type A coronary prone behavior patterns differed in both single- and multiple-task performance from individuals who showed little evidence of such a pattern. Additionally, individuals with a strong Type A pattern showed some dissociation between objective performance and the experience of mental workload. Author

A86-33776

HUMAN FACTORS SOCIETY, ANNUAL MEETING, 29TH, BALTIMORE, MD, SEPTEMBER 29-OCTOBER 3, 1985, PROCEEDINGS, VOLUMES 1 & 2

R. W. SWEZEY, ED. Meeting supported by Carlow Associates, Inc., Army, U.S. Nuclear Regulatory Commission, et al Santa Monica, CA, Human Factors Society, 1985. Vol. 1, 655 p.; vol. 2, 550 p. For individual items see A86-33777 to A86-33830.
Copyright

Papers are presented on vigilance mechanisms, information-processing approaches to the study of human-computer interaction, human factors in telecommunications assessing the effects of individual differences on mental and physical workload; computers for training, instruction, and information retrieval; display simplification, visual search, and decluttering, and expert/knowledge-based systems. Topics discussed include vision information scanning, and retrieval; human factors in accident analysis; managing organizational and product design changes, visual displays and VDT usage; industrial ergonomics; industrial safety; the objectives for human performance and research in military command and control; space and teleoperation; and habitability in constrained/constraining environments. Consideration is given to automation; the use of event-related brain potentials in measurement of attention, performance, and workload, maintenance and simulation training, visual performance and color displays; attention and decision making, human factors in space; and future training technologies. I.F.

A87-12216*# Search Technology, Inc., Norcross, GA.

HUMAN FACTORS OF INTELLIGENT COMPUTER AIDED DISPLAY DESIGN

R. M. HUNT (Search Technology, Inc., Norcross, GA) IN Annual Aerospace Applications of Artificial Intelligence Conference, 1st, Dayton, OH, September 16-19, 1985, Proceedings. Dayton, OH, AAAIC Secretariat, 1985, p. 173-181. refs
(Contract NAS1-17874)

Design concepts for a decision support system being studied at NASA Langley as an aid to visual display unit (VDU) designers are described. Ideally, human factors should be taken into account by VDU designers. In reality, although the human factors database on VDUs is small, such systems must be constantly developed. Human factors are therefore a secondary consideration. An expert system will thus serve mainly in an advisory capacity. Functions can include facilitating the design process by shortening the time to generate and alter drawings, enhancing the capability of breaking design requirements down into simpler functions, and providing

THE HUMAN INTERFACE

visual displays equivalent to the final product. The VDU system could also discriminate, and display the difference, between designer decisions and machine inferences. The system could also aid in analyzing the effects of designer choices on future options and in enunciating when there are data available on a design selections.

M.S.K

A87-16716* George Washington Univ., Washington, DC. **EVALUATION OF EXPERT SYSTEMS - AN APPROACH AND CASE STUDY**

J. LIEBOWITZ (George Washington University, Washington, DC) IN: The engineering of knowledge-based systems. Proceedings of the Second Conference on Artificial Intelligence Applications, Miami Beach, FL, December 11-13, 1985. Washington, DC, IEEE Computer Society Press, 1985, p. 564-571. refs (Contract NGT-09-010-800)

Copyright

Techniques that were applied in defining an expert system prototype for first-cut evaluations of the software functional requirements of NASA satellite command management activities are described. The prototype was developed using the Knowledge Engineering System. Criteria were selected for evaluating the satellite software before defining the expert system prototype. Application of the prototype system is illustrated in terms of the evaluation procedures used with the COBE satellite to be launched in 1988. The limited number of options which can be considered by the program mandates that biases in the system output must be well understood by the users.

M.S.K.

A87-16818* Search Technology, Inc., Norcross, GA. **AN ARCHITECTURE FOR INTELLIGENT INTERFACES - OUTLINE OF AN APPROACH TO SUPPORTING OPERATORS OF COMPLEX SYSTEMS**

W. B. ROUSE, N. D. GEDDES, and R. E. CURRY (Search Technology, Inc., Norcross, GA) IN: NAECON 1986; Proceedings of the National Aerospace and Electronics Conference, Dayton, OH, May 19-23, 1986. Volume 3. New York, Institute of Electrical and Electronics Engineers, 1986, p. 914-920. refs (Contract F33615-82-C-0509; NAS1-17874; NAS2-12048)

Copyright

The conceptual design of a comprehensive support system for operators of complex systems is presented. Key functions within the support system architecture include information management, error monitoring, and adaptive aiding. One of the central knowledge bases underlying this functionality is an operator model that involves a 'matrix' of algorithmic and symbolic models for assessing and predicting an operator's activities, awareness resources, intentions, and performance. Functional block diagrams are presented for the overall architecture as well as the key elements within this architecture. A variety of difficult design issues are discussed and ongoing efforts aimed at resolving these issues are noted.

Author

A87-28445* National Aeronautics and Space Administration, Goddard Space Flight Center, Greenbelt, MD. **THE DEVELOPMENT OF AN INTELLIGENT USER INTERFACE FOR NASA'S SCIENTIFIC DATABASES**

WILLIAM J. CAMPBELL (NASA, Goddard Space Flight Center, Greenbelt, MD) and LARRY H. ROELOFS (Computer Technology Associates, Inc. McLean, VA) Telematics and Informatics (ISSN 0736-5853), vol. 3, no. 3, 1986, p. 177-190. refs

Copyright

The National Space Science Data Center (NSSDC) has initiated an Intelligent Data Management (IDM) research effort which has as one of its components, the development of an Intelligent User Interface (IUI). The intent of the IUI effort is to develop a friendly and intelligent user interface service that is based on expert systems and natural language processing technologies. This paper presents the design concepts, development approach and evaluation of performance of a prototype Intelligent User Interface Subsystem (IUIS) supporting an operational database.

Author

A87-33020

MAN/SYSTEM INTEGRATION STANDARDS FOR SPACE SYSTEMS

KEITH H. MILLER (Boeing Aerospace Co., Seattle, WA) IN: Human Factors Society, Annual Meeting, 30th, Dayton, OH, Sept. 29-Oct. 3, 1986, Proceedings. Volume 1. Santa Monica, CA, Human Factors Society, 1986, p. 358-362.

Copyright

This paper presents an overview of the Man/System Integrations Standards (MSIS) program. The standards to be developed by this program provide specific information for use in the design of space systems to ensure proper integration of the man/system interface requirements with those of other aerospace disciplines. These man/system interface requirements apply to the launch, reentry, on-orbit, and extraterrestrial space environments. Concise design considerations, design requirements, and design examples are provided. The standards are being developed with broad government and industry collaboration via a Government/Industry Advisory Group (GIAG) that meets four times with the contractor team to critique the standards as they are being developed. The documentation (released in January 1987) will consist of four hardcopy volumes, a videotape, and a relational database. The videotape uses in-space film footage from Gemini, Skylab, and the Shuttle to illustrate specific man/system integration problems (scenes are cross-referenced to the MSIS topics). The relational database provides a means for storing and manipulating the MSIS data.

Author

A87-33044

EFFECTS OF DISPLAY PROXIMITY AND MEMORY DEMANDS ON THE UNDERSTANDING OF DYNAMIC MULTIDIMENSIONAL INFORMATION

KELLY HARWOOD, CHRISTOPHER WICKENS, ARTHUR KRAMER, DEANNA CLAY, and YILI LIU (Illinois, University, Champaign) IN: Human Factors Society, Annual Meeting, 30th, Dayton, OH, Sept. 29-Oct. 3, 1986, Proceedings Volume 2. Santa Monica, CA, Human Factors Society, 1986, p. 786-789. refs (Contract F30602-81-C-0206)

Copyright

Two experiments explored the ability of individuals to integrate several sources of information about units or conceptual objects. The task domain might describe the air traffic controller's monitoring of the horizontal and vertical separation of several aircraft, the process controller's supervision of the temperature, pressure, and entropy of several energy systems, or any other multidimensional database. The first experiment examined working memory limits for different object-attribute combinations. When subjects monitored a display with a smaller number of objects with more attributes, responses were slower but significantly more accurate than for a larger number of objects with few attributes. In the second experiment, interest centered on how variations of proximity affect the detection of events that occur within a multidimensional database. Results showed that the use of color and spatial position to define proximity facilitated information integration and thereby event detection.

Author

A87-33502

STRATEGY AND OPTIMIZATION IN HUMAN INFORMATION PROCESSING

GEORGE SPERLING (New York University, NY) and BARBARA ANNE DOSHER (Columbia University, New York) IN: Handbook of perception and human performance. Volume 1. New York, Wiley-Interscience, 1986, p. 2-1 to 2-65. refs

Copyright

Methods and theories for studying a subject's strategies in the performance of perceptual and cognitive tasks are discussed. Compound and concurrent tasks are defined and compared. The signal detection theory, attention, and economics are examined. Resource sharing and concurrent tasks, in particular simultaneous auditory two-channel detection, shadowing, concurrent visual search, and attention operating characteristics, are analyzed. Consideration is given to ideal performance in compound reaction-time tasks, the costs and benefits in reaction time tasks,

and speed-accuracy trade-offs. Pure strategy, resource allocation, and strategy mixtures are described. Path dependence in performance operating characteristics and the dynamics of strategy switching are investigated. Examples of compound and concurrent tasks are presented. I.F.

A87-33532

THE MODEL HUMAN PROCESSOR - AN ENGINEERING MODEL OF HUMAN PERFORMANCE

STUART K. CARD, THOMAS P. MORAN (Xerox Research Center, Palo Alto, CA), and ALLEN NEWELL (Carnegie-Mellon University, Pittsburgh, PA) IN: Handbook of perception and human performance. Volume 2. New York, Wiley-Interscience, 1986, p. 45-1 to 45-35. refs
Copyright

A human processor model of the human mind is proposed. The model is composed of a set of memories and processors combined with a set of operating principles, and it represents three interacting subsystems. The functions of the perceptual, motor, and cognitive systems are described. Consideration is given to the performance of tasks such as perception, motor skill, simple decision, learning and retrieval, and problem solving; examples of these tasks are presented. The limitations of the human processor model are discussed. I.F.

A87-48582* National Aeronautics and Space Administration, Washington, DC.

SCIENTIFIC CUSTOMER NEEDS - NASA USER

DAVID C. BLACK (NASA, Washington, DC) AIAA and NASA, International Symposium on Space Information Systems in the Space Station Era, Washington, DC, June 22, 23, 1987. 4 p. (AIAA PAPER 87-2196) Copyright

Some requirements for scientific users of the Space Station are considered. The use of testbeds to evaluate design concepts for information systems, and for interfacing between designers and builders of systems is examined. The need for an information system that provides an effective interaction between ground-based users and their space-based equipment is discussed. I.F.

A88-16167#

NASA-STD-3000, MAN-SYSTEM INTEGRATION STANDARDS - THE NEW SPACE HUMAN ENGINEERING STANDARDS

KEITH H. MILLER and CHARLES W. GEER (Boeing Aerospace Co., Seattle, WA) IAF, International Astronautical Congress, 38th, Brighton, England, Oct. 10-17, 1987. 8 p. (IAF PAPER 87-550) Copyright

Various aspects of the process used to develop NASA-STD-3000, Man-System Integration Standards (MSIS) are reviewed, as are the documents, the database, and a videotape that are currently available from NASA. The MSIS provides the specific information needed to ensure proper integration of the man-system interface requirements with those of other aerospace disciplines. In addition to the requirements, the MSIS provides design considerations and examples which help the user understand the rationale behind the requirements. The implementation and maintenance of MSIS are also discussed. V.L.

A88-35376

ADVANCED HELICOPTER COCKPIT INFORMATION MANAGEMENT

STEVE MARTZ (Boeing Military Airplane Co., Wichita, KS), CATHY LEININGER, and JIM DACUS (Boeing Computer Services Co., Wichita, KS) IN: Rotorcraft flight controls and avionics; Proceedings of the National Specialists' Meeting, Cherry Hill, NJ, Oct. 13-15, 1987. Alexandria, VA, American Helicopter Society, 1987, 8 p. refs
Copyright

The growing complexity of advanced helicopter systems has increased pilot workload. Human-machine interface characteristics and thus mission performance are adversely affected by less than optimal integration of information from complex helicopter systems. Expert system technology offers great potential for alleviating the

pilot workload associated with making routine as well as exceptional decisions as to information to be displayed. The numerous possible combinations of display information can be intelligently filtered by an expert system dedicated to cockpit information management. An additional benefit is the flexibility obtained through an expert system implementation of a cockpit information manager. This paper describes a prototype expert system developed to demonstrate these benefits. Author

A88-35401

HUMAN FACTORS SOCIETY, ANNUAL MEETING, 31ST, NEW YORK, NY, OCT. 19-23, 1987 "PROCEEDINGS. VOLUMES 1 & 2

Meeting organized by the Human Factors Society; Sponsored by the American Telephone and Telegraph Co., Bell Communications Research, Inc., IBM, et al. Santa Monica, CA, Human Factors Society, 1987, p. Vol. 1, 753 p.; vol. 2, 728 p. For individual items see A88-35402 to A88-35498.

Copyright

Topics discussed include macroergonomics, automation safety, general techniques of test and evaluation, issues in training design, performance issues in displays and control, biomechanical methods, the criterion task set, simulator sickness, capacity limitations in human information processing, and the use of physiological measures in aviation-related research. Attention is also given to ergonomic design, hands and gloves, database access and format, environmental design, visual and auditory detection performance, development of test methods, and tools and techniques for interface design. B.J.

A88-35404

EMPIRICAL USER MODELING - COMMAND USAGE ANALYSES FOR DERIVING MODELS OF USERS

MATTHEW P. ANDERSON, JAMES E. McDONALD, and ROGER W. SCHVANEVELDT (New Mexico State University, Las Cruces) IN: Human Factors Society, Annual Meeting, 31st, New York, NY, Oct. 19-23, 1987, Proceedings, Volume 1. Santa Monica, CA, Human Factors Society, 1987, p. 41-45. refs
Copyright

Models of users' procedural knowledge were derived from the records of command usage obtained from nine experienced users of the Unix operating system. Pairwise transitions between user command entries were analyzed for the purpose of identifying salient command patterns associated with task-based user behaviors. Structural models of command usage patterns were obtained from Pathfinder network scaling of Unix command events. The network representation of command patterns was evaluated as a method for abstracting users' procedural knowledge. These network scaling solutions revealed patterns that were common both within and across users' command usage. Author

A88-35418

ADVANCED HUMAN FACTORS ENGINEERING TOOL TECHNOLOGIES

KATHRYN E. PERMENTER, STEPHEN A. FLEGER, and THOMAS B. MALONE (Carlow Associates, Inc., Fairfax, VA) IN: Human Factors Society, Annual Meeting, 31st, New York, NY, Oct. 19-23, 1987, Proceedings, Volume 1. Santa Monica, CA, Human Factors Society, 1987, p. 345-349.
Copyright

The paper presents results of a study to identify advanced human factors engineering (HFE) tool technologies that are in use, or projected for use, by HFE practitioners. The study was intended to support the U.S. Army's MANPRINT program. Practitioners reported that the greatest need within the HF community was for the development of automated task analysis programs, HF database compendia, workload prediction tools, and expert systems. The majority of practitioners surveyed expressed a desire to see more advanced tools developed for the microcomputer. B.J.

THE HUMAN INTERFACE

A88-46511* Miami Univ., Coral Gables, FL

FALLIBLE HUMANS AND VULNERABLE SYSTEMS - LESSONS LEARNED FROM AVIATION

EARL L. WIENER (Miami University, Coral Gables, FL) IN: Information systems: Failure analysis; Proceedings of the NATO Advanced Research Workshop, Bad Windsheim, Federal Republic of Germany, Aug. 18-22, 1986. Berlin and New York, Springer-Verlag, 1987, p. 163-181. refs
(Contract NCC2-377)
Copyright

It is suggested that the problems being experienced in complex automatic systems are essentially due to the failure of information management and communication. The failure covers the entire spectrum, display devices and techniques, coding information so as to reduce human error, and information economy, i.e., resisting the temptation to bombard the operator with unlimited information simply because the system possesses the capability to do so. Since there has been great progress in hardware engineering, it is suggested that further attention is needed in the 'soft' side of systems. The approach should focus on (1) preventing human cognitive slips and (2) making the systems less vulnerable to such slips when they do occur. Most of the examples are taken from studies of cockpit automation. B.J

A89-12179

AN AIDE FOR INSTRUCTORS ON INTEGRATED ENGINEERING DESIGN AND SUPPORT

B. K. HATCHEL¹, G. BENATAR, R. E. FULTON (Georgia Institute of Technology, Atlanta), and C. L. BLACKBURN (PRC Kentron, Inc., Hampton, VA) Engineering with Computers (ISSN 0177-0667), vol. 4, no. 1-2, 1988, p. 39-52. Research supported by the Georgia Institute of Technology. refs
(Contract F33615-84-C-3216)
Copyright

The development and use of an interpreted design support-prototype instructor (IDS/PI) system to serve as an education and research guide for integration and data base management concepts are reported. The key software includes a computer-aided design system, a structural analysis program, various graphics packages, and a relational data base management system. The principal features of the IDS/PI system are described, and its usefulness is illustrated by examples. V.L

A89-18865

HUMAN FACTORS IMPACT ON THE V-22 OSPREY COCKPIT DEVELOPMENT - AN OVERVIEW

VIRGIL A. GRAF and CHARLES D. HOLLEY (Bell Helicopter Textron, Inc., Fort Worth, TX) IN: AHS, Annual Forum, 44th, Washington, DC, June 16-18, 1988, Proceedings. Alexandria, VA, American Helicopter Society, 1988, p. 201-212. refs
Copyright

The V-22 is a multimission, multiservice tiltrotor aircraft that will make its first flight this year. The crewstation configuration, with its advanced cockpit management system, represents the culmination of the human engineering (HE) program from predesign through full-scale development. To illustrate the HE impact on the development program, three representative cockpit domains are described: control and display architecture, display design, and cockpit visibility. The HE process, including associated tools, is emphasized throughout the discussion. Implementation of this process has resulted in a cockpit that is designed with the user as a prime consideration. Author

A89-29067* National Aeronautics and Space Administration, Goddard Space Flight Center, Greenbelt, MD

THE TRANSPORTABLE APPLICATIONS ENVIRONMENT - AN INTERACTIVE DESIGN-TO-PRODUCTION DEVELOPMENT SYSTEM

DOROTHY C. PERKINS, DAVID R. HOWELL, and MARTHA R. SZCZUR (NASA, Goddard Space Flight Center, Greenbelt, MD) IN: Digital image processing in remote sensing. London and Philadelphia, PA, Taylor and Francis, 1988, p. 39-64. refs
Copyright

An account is given of the design philosophy and architecture of the Transportable Applications Environment (TAE), an executive program binding a system of applications programs into a single, easily operable whole. TAE simplifies the job of a system developer by furnishing a stable framework for system-building; it also integrates system activities, and cooperates with the host operating system in order to perform such functions as task-scheduling and I/O. The initial TAE human/computer interface supported command and menu interfaces, data displays, parameter-prompting, error-reporting, and online help. Recent extensions support graphics workstations with a window-based, modeless user interface. O.C.

A89-45294#

A PILOT'S VIEW OF INTELLIGENT SYSTEMS

DOUGLAS M. HOSMER (Lockheed Aeronautical Systems Co., Burbank, CA) Aerospace America (ISSN 0740-722X), vol. 27, July 1989, p. 32, 33.
Copyright

The current trend toward single-seat combat aircraft and the accompanying evolution of avionics and complex subsystems have increased pilot workloads to a degree that is unacceptable in combat. An interactive/cooperative real-time expert system functioning as 'pilot's associate' is therefore proposed which can alternatively either assess a situation and advise the pilot as to possible courses of action or, in the event of the pilot's delegation of the requisite authority, take appropriate action. The greatest anticipated payoff from a pilot's associate system lies in the sorting, filtering, and fusing of information destined for the pilot's attention and decisionmaking. O.C.

A89-49456#

COCKPIT INFORMATION MANAGEMENT THROUGH AN INTELLIGENT PILOT/VEHICLE INTERFACE

RALPH E. LAMBERT (McDonnell Aircraft Co., Saint Louis, MO) AIAA, AHS, and ASEE, Aircraft Design, Systems and Operations Conference, Seattle, WA, July 31-Aug. 2, 1989. 10 p.
(AIAA PAPER 89-2098) Copyright

The development of a cockpit information management system that can integrate data into useable information for the pilot is discussed, focusing on the pilot/vehicle interface (PVI). The ways in which a PVI would transmit information to the pilot of a fighter and attack aircraft are examined for various events, including encounter with enemy aircraft, alternate target decision, fuel problems, and recovery. R.B.

N84-14795# Los Alamos Scientific Lab., NM. Computer User Services Group

MODELING THE USER IN INTELLIGENT USER INTERFACES

M. L. STODDARD and R. J. DOUGLASS 1983 9 p. refs
Presented at the CHI Conf., Cambridge, Mass. 12-15 Dec. 1983
(Contract W-7405-ENG-36)
(DE84-012664, LA-UR-83-1392, CONF-831202-2) Avail. NTIS HC A02/MF A01

A methodology for explicitly defining a model of a program's users and for evaluating the effectiveness of the user interface is presented. The development of an explicit user model will reduce user costs by both reducing the cost of software development and increasing user productivity. The components of the methodology are described, and an example of using the methodology in the development of an expert consultant system is given. The methodology is useful in preliminary design and testing of such interactive software as electronic mail, information retrieval systems, editors, and management information systems. DOE

N84-15790# Hawaii Univ., Manoa.

INFLUENCES ON GROUP PRODUCTIVITY. 2: FACTORS INHERENT IN THE PERSON. A BIBLIOGRAPHIC SYNOPSIS Interim Report

S. OSATO, P. E. CAMF S., N. GOODMAN (St. Peter's College), and D. LANDIS (Indiana Univ. - Purdue Univ.) 15 Jul 1983 62 p. refs

(Contract N00014-83-K-0021)
(AD-A131015; CARE-83-3) Avail. NTIS HC A04/MF A01
CSCS 05/10

The present summary examines the effects of heterogeneity on a group's productivity. Heterogeneity has been defined on many different dimensions without much consistency between workers. For the sake of clarity, we have grouped the studies by the type of variable used to define heterogeneity: personality variables or sociodemographic variables. In all the studies surveyed, these different variables have served as the independent dimension

GRA

N84-18113# Rutgers - The State Univ., New Brunswick, NJ.
SERVICES FOR THE ANALYSIS AND EVALUATION OF
INFORMATION Final Report

H. J. HALL 22 Dec. 1982 127 p

(Contract NSF-67016628)

(PB84-104504) Avail. NTIS HC A07/MF A01 CSCS 05/2

Skilled services for the analysis and evaluation of information (IAE) go beyond searching and retrieval to provide information that is critically evaluated for use. This is a study of what IAE is and does, based on field interviews and extensive seminar discussions with information managers, analysts, and major users. The IAE is a form of team research that depends on one-to-one interactions between the information customer, the research user, and an experienced professional analyst.

GRA

N84-20187# Navy Personnel Research and Development Center,
San Diego, CA.

GUIDE TO THE DEVELOPMENT OF A HUMAN FACTORS
ENGINEERING DATA RETRIEVAL SYSTEM Interim Report, 1
Oct. 1981 - 30 Sep. 1982

D. MEISTER and R. E. BLANCHARD Nov. 1983 44 p

(Contract F57-526)

(AD-A136918; NPRDC-TR-84-4) Avail. NTIS HC A03/MF A01
CSCS 05/5

This report describes the functional specifications for the development of a human factors engineering (HFE) data retrieval system to be used by system acquisition managers, designers, and HFE specialists. The system is organized around the following requirements: system must be responsive to the needs of a variety of users, include data of the type presently available in MIL STD 1472C plus quantitative estimates of human performance, maintenance and logistics data, specifications and standards, and analytical and evaluational techniques, include data from operational Navy sources not presently found in any HFE data base, be formatted in three tracks, with Track 1 consisting of abstracts of individual studies, Track 2 containing data from the same sources but in a highly synthesized form, and Track 3 containing all other ancillary information such as HFE specifications and standards.

GRA

N84-22254# Air Force Inst of Tech., Wright-Patterson AFB,
OH. School of Engineering.

A NATURAL LANGUAGE INTERFACE FOR A PROLOG
DATABASE M.S. Thesis

R. P. WHITE 16 Dec. 1983 85 p

(AD-A138071; AFIT/GCS/EE/83D-22) Avail. NTIS HC A05/MF
A01 CSCS 09/2

A natural language (NL) interface to a relational data base was developed with careful consideration given to the human factors needed to aid a novice user in accessing data. The entire system is written in DEC-10 PROLOG, with three distinguishing contributions: A simple grammar was developed to parse phrases like: 'officers where rank is captain and status is single and age is less than 32'; the developed NL compiler accepts English phrases or commands as queries and translates them into PROLOG; The human factors that contribute to the system are: a help file to aid user perception of the data, a simple grammar, an interactive view of all retrieved tuples, two forms of ellipsis, user defined aliases, and limited use of quantifiers.

GRA

N84-22844# Massachusetts Inst. of Tech., Cambridge.
INFORMATION THEORETIC MODELS OF MEMORY IN HUMAN
DECISIONMAKING MODELS

S. A. HALL and A. H. LEVIS *In its Proc. of the 6th MIT/ONR Workshop on C3 (Command, Control, and Commun.) Systems p 67-75 Dec. 1983 Prepared in cooperation with RCA Astro-Electronics Div., Princeton, N.J.*

(Contract AF-AFOSR-0029-80)

(AD-P002883) Avail. NTIS HC A14/MF A02 CSCS 12/1

Models of memory and information storage useful in the modeling and analysis of decisionmaking with bounded rationality are discussed. An information theoretic model of permanent memory is presented for describing the accessing of stored information by the algorithms within the human decisionmaker model. It is then applied to the study of the performance - workload characteristic of a decisionmaker performing a dual task.

Author (GRA)

N84-28452# Air Force Academy, CO.
MANAGEMENT INFORMATION SYSTEMS: A NEED FOR
HUMAN FACTORS

I. A. BOYLESS *In its Proc. of the 9th Symp. on Psychol. in the JOD p 385-389 Apr. 1984*

(AD-P003313) Avail. NTIS HC A99/MF E06 CSCS 05/1

The microcomputer revolution in management information systems now allows almost instant access to millions of bits of information to predict, trend, or even recall past activities. Additionally, the access to this information is now being accomplished by placing the computer on desktops everywhere. Often these computers are user friendly and little or no computerese is needed to operate them. These desktop computers have been human engineered from the software point of view but often the actual human engineering development and evaluation is lacking. This paper takes a general look at the lack of human engineering development and evaluation and suggests items that should be addressed in these two areas.

Author (GRA)

N84-29481# Naval Training Equipment Center, Orlando, FL
ANNOTATED BIBLIOGRAPHY OF HUMAN FACTORS
LABORATORY REPORTS (1945-1968): SUPPLEMENT 4,
1979-1983

Jan. 1984 36 p

(AD-A142141; NAVTRAEQUIPC-IH-158) Avail. NTIS HC
A03/MF A01 CSCS 05/5

A complete bibliographic reference and an abstract are given for each publication of the Human Factors Laboratory from 1979 through 1983 including in-house and contractor-developed documents. Three indexes are provided: Index by Source, Author Index, and Subject Matter Index

GRA

N84-32275 Stanford Univ., CA.
THE USER'S MENTAL MODEL OF AN INFORMATION
RETRIEVAL SYSTEM: EFFECTS ON PERFORMANCE Ph.D.
Thesis

C. L. BORGMAN 1984 377 p

Avail. Univ. Microfilms Order No. DA8408258

An empirical study was performed to train naive subjects in the use of a prototype Boolean logic-based information retrieval system on a database of bibliographic records drawn from the OCLC system. The research was based on the mental models theory from cognitive psychology which proposes that people can be trained to develop a mental model or a qualitative simulation of a system which will aid in generating methods for interacting with the system, debugging errors, and keeping track of one's place in the system. Conceptual training based on a system model will be superior to procedural training in the mechanics of the system. A laboratory experiment was performed with two training conditions (conceptual and procedural), with each condition split by gender. As predicted, the conceptual training had no effect on the ability to perform simple, procedural tasks, but subjects trained conceptually performed better on complex tasks which require extrapolation from the basic operations of the system. The few gender differences that were found were trivial.

Dissert. Abstr.

THE HUMAN INTERFACE

N85-19647# Computer Technology Associates, Inc., Englewood, CO.

SECTOR SUITE MAN-MACHINE FUNCTIONAL CAPABILITIES AND PERFORMANCE REQUIREMENTS Final Report

H. A. AMMERMAN, ARDREY, BERGEN, BRUCE, FLIGG, JONES, G. V. KLOSTER, LENOROVITZ, PHILLIPS, and REEVES 10 Aug. 1984 410 p
(Contract DT-FA01-83-Y-10554)
(AD-A148881; FAA-APO-84-18; FR-4) Avail. NTIS HC A18/MF A03 CSCL 05/8

Sector Suite Man/Machine Functional Capabilities and Performance Requirements documents both the Sector Suite (SS) Man/Machine Interface (MMI) Functional Capabilities and the SS Workstation Functional Capabilities Requirement specifications are defined for SS MMI application processes, user interface language, display management, resource management, error detection/recovery, data base update/retrieval and SS workstation hardware. The controller tasks defined in CDRL A002-Operations Concept for the AAS MMI are further decomposed into task elements which address data inputs and outputs, and task criticality and frequency. These task element statements are then used to derive SS functional requirements. This analysis provides the basis for a conceptual model of interaction, derives the functional capabilities and performance requirements for essential SS hardware and software functions, drives MMI processing capacity and response time requirements, and defines the requirements for MMI data bases and data base management. GRA

N85-19649# Human Engineering Labs., Aberdeen Proving Ground, MD.

GUIDE TO HUMAN FACTORS INFORMATION SOURCES Final Report

T. J. WANG Nov. 1984 42 p Sponsored by Army
(AD-A149102) Avail. NTIS HC A03/MF A01 CSCL 05/5

This guide shows how to search for literature relating to human factors. Manual and machine procedures are discussed in detail. Attention is directed to the development and location of sources of human factors expository material and human factors quantitative data. GRA

N86-18985# Carnegie-Mellon Univ., Pittsburgh, PA. Dept. of Psychology.

BEYOND ASSOCIATIONS: STRATEGIC COMPONENTS IN MEMORY RETRIEVAL Technical Report, Jun. 1983 - Jul. 1985

L. M. REDER 3 Oct. 1985 44 p
(Contract N00014-84-K-0063; NSF DNS-03711; RR0-4206)
(AD-A160783; TR-85-3-ONR) Avail. NTIS HC A03/MF A01 CSCL 05/10

There are two dominant approaches to understanding human memory, one in the tradition of Ebbinghaus, the other in the tradition of Bartlett. The former approach views learning as the formation of associations, while in the latter views memory as the process of reconstruction of fragments based on prior knowledge. These positions are often considered antithetical. Ebbinghaus was concerned with laws of memory and tried to control for prior knowledge; Bartlett was concerned with how our world knowledge interacts with learning and memory. This paper argues that one can collect data that supports either position because people can adopt one of several memory strategies. Data are reviewed that illustrate that the same knowledge structure can produce dramatically different results, depending on the strategies that operate on that structure. Author (GRA)

N86-21143# California Univ., San Diego. Jolla **INTERACTIVE ACTIVATION: MODELS OF PERCEPTION AND COMPREHENSION Status Report, 1 Dec. 1984 - 1 Oct. 1985**

J. L. ELMAN and J. L. MCCLELLAND 1 Oct. 1985 15 p
(Contract N00014-85-K-0076)
(AD-A161362) Avail. NTIS HC A03/MF A01 CSCL 05/10

The objective of this research is to construct a computationally sufficient, biologically plausible, and behaviorally adequate account of human information processing skills in visual and auditory language processing. We have the following specific research goals

for our contract. (1) To implement a model of reading printed text through a series of fixations. The model is intended to account for the integration of visual information over successive fixations, and the interaction of visual and contextual information in reading. (2) To implement a new version of our model of speech perception (TRACE), using programmable connections to allow the model to tune itself, in the course of processing, to changes in global parameters such as rate. This new model (which we will call the Programmable TRACE) is intended to account for human sensitivity to global as well as local contextual influences on the speech signal while retaining all the virtues of the present version of TRACE. (3) To begin work on the development of simulation models designed to capture aspects of interactions between lexical, syntactic, and semantic constraints on the construction of syntactic and functional representations of sentences. GRA

N86-25123# Naval Postgraduate School, Monterey, CA. **MAN-MACHINE SYSTEMS OF THE 1990 DECADE: COGNITIVE FACTORS AND HUMAN INTERFACE ISSUES**

P. J. HOFFMAN Aug. 1985 53 p refs
(AD-A163865; NPS74-85-002) Avail. NTIS HC A04/MF A01 CSCL 05/8

This paper presents the primary psychological concepts which are fundamental to the design of man-machine interfaces for intelligent systems of the 1990's. These concepts embrace perception, learning motivation, and cognitive capacities of human operators, in systems which require a high degree of operator-machine interaction. The central role of feedback is emphasized through simple schematic examples, designed to provide an understanding of the reciprocity requirements in man-machine communication. Cognitive theory and recent experimental data form the basis for discussion of visual image storage, short-term memory, long-term memory, transfer rates and buffering of information being processed by the human operator, under control of a central processor with a cycle time of roughly 70 milliseconds. Systems of the 1990 era will provide increased capability for high-speed processing of data and will utilize increasing numbers of decision-aides, spreadsheets and AI tools. Users of these systems will be components of networks, linked via efficient communication systems to other users and other subsystems. These developments will lead to fundamental changes in the work place. GRA

N86-32983# National Aeronautics and Space Administration. Ames Research Center, Moffett Field, CA

MEMORY AND SUBJECTIVE WORKLOAD ASSESSMENT

L. STAVELAND (San Jose State Univ., Calif.), S. HART, and Y. Y. YEHL (Illinois Univ., Urbana-Champaign.) In its 21st Annual Conference on Manual Control 13 p May 1986
Avail. NTIS HC A22/MF A03 CSCL 05/8

Recent research suggested subjective introspection of workload is not based upon specific retrieval of information from long term memory, and only reflects the average workload that is imposed upon the human operator by a particular task. These findings are based upon global ratings of workload for the overall task, suggesting that subjective ratings are limited in ability to retrieve specific details of a task from long term memory. To clarify the limits memory imposes on subjective workload assessment, the difficulty of task segments was varied and the workload of specified segments was retrospectively rated. The ratings were retrospectively collected on the manipulations of three levels of segment difficulty. Subjects were assigned to one of two memory groups. In the Before group, subjects knew before performing a block of trials which segment to rate. In the After group, subjects did not know which segment to rate until after performing the block of trials. The subjective ratings, RTs (reaction times) and MTs (movement times) were compared within group, and between group differences. Performance measures and subjective evaluations of workload reflected the experimental manipulations. Subjects were sensitive to different difficulty levels, and recalled the average workload of task components. Cueing did not appear to help recall, and memory group differences possibly reflected

variations in the groups of subjects, or an additional memory task. Author

N86-32985* # California Univ., Los Angeles Dept. of Safety Science and Human Factors.

KNOWLEDGE-BASED LOAD LEVELING AND TASK ALLOCATION IN HUMAN-MACHINE SYSTEMS

M. H. CHIGNELL and P. A. HANCOCK In NASA. Ames Research Center, 21st Annual Conference on Manual Control 11 p May 1986

Avail: NTIS HC A22/MF A03 CSCL 05/8

Conventional human-machine systems use task allocation policies which are based on the premise of a flexible human operator. This individual is most often required to compensate for and augment the capabilities of the machine. The development of artificial intelligence and improved technologies have allowed for a wider range of task allocation strategies. In response to these issues a Knowledge Based Adaptive Mechanism (KBAM) is proposed for assigning tasks to human and machine in real time, using a load leveling policy. This mechanism employs an online workload assessment and compensation system which is responsive to variations in load through an intelligent interface. This interface consists of a loading strategy reasoner which has access to information about the current status of the human-machine system as well as a database of admissible human/machine loading strategies. Difficulties standing in the way of successful implementation of the load leveling strategy are examined. Author

N87-13840# Naval Postgraduate School, Monterey, CA. **USER INTERFACE DESIGN FOR TWO DIMENSIONAL POLYGONALLY ENCODED GEOLOGICAL SURVEY MAPS**

J. M. AMMANN, R. B. MCGHEE, and M. J. ZYDA Jul. 1986 80 p

(AD-A170612; NPS52-86-017) Avail: NTIS HC A05/MF A01 CSCL 08/2

This study presents an overview of a cartographic processing pipeline for the generation and maintenance of polygonally encoded data bases from published U.S. Geological Survey maps. The focus of this research centers on the development of an interactive editing system. The editor, serving as the final step in the overall project, provides the user with the capability to correct and modify dated topographic characteristics. A variety of processing and digitizer induced errors introduced into the data base from previous utility steps can also be corrected. Included is a discussion on the internal indexing scheme used for managing revisions and the techniques and algorithms for updating the data bases. GRA

N87-16657# Defense Technical Information Center, Alexandria, VA. Office of Information Systems and Technology. **PROCEEDINGS OF THE 2ND CONFERENCE ON COMPUTER INTERFACES AND INTERMEDIARIES FOR INFORMATION RETRIEVAL Summary Report**

CAROL E. JACOBSON and SHIRLEY A. WITGES May 1986 379 p Proceedings held in Boston, Mass., 28-31 May 1986, sponsored in part by MIT

(AD-A174000, DTIC/TR-86/5) Avail: NTIS HC A17/MF A02 CSCL 05/2

These proceedings consist of papers and product descriptions presented at the conference which was jointly sponsored by the Defense Technical Information Center and the Massachusetts Institute of Technology. The purpose of this conference was to bring together experts in the field of user interfaces and gateways for information retrieval systems. Twenty eight speakers presented papers in the following areas of interest: artificial intelligence in retrieval, gateways, interfaces, common command language, and natural language. GRA

N87-22410* # National Aeronautics and Space Administration, Washington, DC.

NASA INFORMATION SCIENCES AND HUMAN FACTORS PROGRAM Annual Report, 1984

LEE B. HOLCOMB, DUNCAN E. MCIVER, JOHN D. DIBATTISTA,

RONALD L. LARSEN, MELVIN D. MONTEMERLO, KEN WALLGREN, MARTY SOKOLOSKI, and DICK WASICKO May 1985 190 p (NASA-TM-87569; NAS 1.15:87569) Avail: NTIS HC A09/MF A01 CSCL 05/8

This report contains FY 1984/85 descriptions and accomplishments in six sections: Computer Science and Automation, Controls and Guidance, Data Systems, Human Factors, Sensor Technology, and Communications. Author

N87-23158* # Jet Propulsion Lab., California Inst. of Tech., Pasadena.

THE EVALUATION AND EXTENSION OF TAE IN THE DEVELOPMENT OF A USER INTERFACE MANAGEMENT SYSTEM

BRENDA BURKHART and ROSS SUGAR (Century Computing, Inc., Laurel, Md.) In NASA. Goddard Space Flight Center Sixth Annual Users' Conference p 31-37 Oct. 1986

Avail: NTIS HC A11/MF A02 CSCL 09/2

The development of a user interface management system (UIMS) for an information gathering and display system is discussed. The system interface requirements are outlined along with the UIMS functional characteristics. Those systems requirements which are supported by the current Transportable Applications Executive (TAE) are listed and necessary modifications to the TAE are described. M.G.

N87-24098* # National Aeronautics and Space Administration, Goddard Space Flight Center, Greenbelt, MD.

THE DEVELOPMENT OF A PROTOTYPE INTELLIGENT USER INTERFACE SUBSYSTEM FOR NASA'S SCIENTIFIC DATABASE SYSTEMS

WILLIAM J. CAMPBELL, LARRY H. ROELOFS, and NICHOLAS M. SHORT, JR. (Science Applications Research, Lanham, Md.) Jun. 1987 57 p

(NASA-TM-87821; REPT-87-B-0266; NAS 1.15:87821) Avail: NTIS HC A04/MF A01 CSCL 09/2

The National Space Science Data Center (NSSDC) has initiated an Intelligent Data Management (IDM) research effort which has as one of its components the development of an Intelligent User Interface (IUI). The intent of the latter is to develop a friendly and intelligent user interface service that is based on expert systems and natural language processing technologies. The purpose is to support the large number of potential scientific and engineering users presently having need of space and land related research and technical data but who have little or no experience in query languages or understanding of the information content or architecture of the databases involved. This technical memorandum presents prototype Intelligent User Interface Subsystem (IUIS) using the Crustal Dynamics Project Database as a test bed for the implementation of the CRUDES (Crustal Dynamics Expert System). The knowledge base has more than 200 rules and represents a single application view and the architectural view. Operational performance using CRUDES has allowed nondatabase users to obtain useful information from the database previously accessible only to an expert database user or the database designer. Author

N87-29132* # National Aeronautics and Space Administration, Goddard Space Flight Center, Greenbelt, MD

INTELLIGENT DATA MANAGEMENT

WILLIAM J. CAMPBELL In NASA, Washington, Proceedings Computer Science and Data Systems Technical Symposium, Volume 1 18 p Aug. 1985

Avail: NTIS HC A16/MF A02 CSCL 09/2

Intelligent data management is the concept of interfacing a user to a database management system with a value added service that will allow a full range of data management operations at a high level of abstraction using human written language. The development of such a system will be based on expert systems and related artificial intelligence technologies, and will allow the capturing of procedural and relational knowledge about data management operations and the support of a user with such

THE HUMAN INTERFACE

knowledge in an on-line, interactive manner. Such a system will have the following capabilities: (1) the ability to construct a model of the users view of the database, based on the query syntax, (2) the ability to transform English queries and commands into database instructions and processes; (3) the ability to use heuristic knowledge to rapidly prune the data space in search processes, and (4) the ability to use an on-line explanation system to allow the user to understand what the system is doing and why it is doing it. Additional information is given in outline form. Author

N88-18189# Naval Personnel Research and Development Center, San Diego, CA.

METHODS OF ELICITING INFORMATION FROM EXPERTS

DAVID MEISTER Oct. 1987 27 p
(AD-A187468; NPRDC-TN-88-2) Avail: NTIS HC A03/MF A01 CSDL 05/8

The biggest bottleneck in the development of expert systems is the problem of eliciting from experts the mechanisms responsible for their expertise. This report examines what is known about experts and suggests a number of ways of eliciting information from them. The literature suggests that the mechanisms of expertise represent deep-seated ways of conceptualizing and perceiving stimuli, and that these mechanisms must be differentiated from relatively superficial proceduralized rules, which make up most of what expert information consists of today. The goal of reproducing the expert's mental processes in a computer system appears unrealistic at present. The only way of determining that one has, in fact, tapped expertise is to build the expert system and evaluate its effectiveness. If it matches or surpasses human proficiency, one has incorporated human expertise into the system. GRA

N88-18298# North Carolina Univ., Chapel Hill. Dept. of Computer Science.

A HYPERTEXT WRITING ENVIRONMENT AND ITS COGNITIVE BASIS

JOHN B. SMITH, STEPHEN F. WEISS, and GORDON J. FERGUSON Oct. 1987 22 p
(Contract MDA903-86-C-0345)
(AD-A188179; TR-87-033) Avail: NTIS HC A03/MF A01 CSDL 05/8

Writing Environment (WE) is a hypertext writing environment that can be used to create both electronic and printed documents. It is intended for professionals who work within a computer network of professional workstations. Since writing is a complex mental activity that uses many different kinds of thinking, WE was designed in accord with an explicit cognitive model for writing. That model raises several important questions for both electronic and printed documents. The paper includes a discussion of the underlying cognitive model, a description of WE as it currently exists and as it will be extended in the near future, as well as a brief outline of experiments being conducted to evaluate both model and system. It concludes by re-examining some of the issues raised by the cognitive model in light of WE, especially the role of constraints in hypertext systems. GRA

N88-20825# Carlow Associates, Inc., Fairfax, VA

ADVANCED HUMAN FACTORS ENGINEERING TOOL TECHNOLOGIES Final Report, 18 Jul. 1986 - 2 Apr. 1987

STEPHEN A. FLEGER, KATHRYN E. PERMENTER, and THOMAS B. MALONE 20 Mar. 1987 276 p
(Contract DAAA15-86-C-0064)
(AD-A189390) Avail: NTIS HC A13/MF A02 CSDL 23/2

Presented are the results of a study to identify the human factors engineering (HFE) technologies or tools presently used, and projected for use, by HFE specialists. Both traditional and advanced tools were candidates for inclusion in the report, although the emphasis of the study was on advanced computer applications. Human factors practitioners representing the government, the military, academe and private industry were surveyed to identify those tools most frequently used or viewed as most important for conducting human factors engineering related work. If advanced tool capabilities did not meet existing job requirements, the specialists identified the types of tools they would like to see

developed to fill the existing technology gaps. The advanced tools were categorized using an eight point classification scheme, which included the phase(s) of the material acquisition process in which the tools' application would be most appropriate. All of the tools were ranked to facilitate tool selection, and entered into a database to accommodate future revisions. The survey resulted in the identification of 113 advanced human factors engineering tools.

GRA

N88-26114# Oak Ridge National Lab., TN.

COMPUTER-AIDED RESEARCH

D. S. HARTLEY, III Mar. 1988 27 p
(Contract DE-AC05-84OR-21400)
(DE88-007771; ORNL/DSRD/TM-11) Avail: NTIS HC A03/MF A01

A computer system can be an invaluable aid to the author of a professional article by helping him to gather, maintain and use reference notes made during the literature-search phase. The researcher/author can build his own set of cross references as he goes and then retrieve those he later determines to be most relevant to his topic. As the data-base continues to grow, the system's usefulness increases. DOE

N88-26805# Carnegie-Mellon Univ., Pittsburgh, PA. Dept. of Psychology.

THE ROLE OF WORKING MEMORY IN LANGUAGE COMPREHENSION

PATRICIA A. CARPENTER and MARCEL A. JUST Feb. 1988 33 p
(Contract N00014-85-K-0584; RR0-4206)
(AD-A192721; ONR-88-1) Avail: NTIS HC A03/MF A01 CSDL 05/8

This chapter provides an account of the transient computational and storage demands that typically arise during comprehension, and of the information management policies that attempt to satisfy those demands. The chapter describes a number of recent studies that examine the trading relation between computation and storage in working memory during language comprehension. Comprehension processes tend to minimize storage requirements by minimizing the number of partial products that have to be stored. The minimization is accomplished by immediately digesting as much of the information from the text as possible (what we have called the immediacy of processing), rather than using a wait-and-see strategy. A second focus is on the differences among individuals in their ability to maintain information in working memory during comprehension. Such individual differences in working memory capacity are closely related to large and stable individual differences in reading comprehension ability. GRA

N88-26837# Air Command and Staff Coll., Maxwell AFB, AL

COMPUTER-AIDED WRITING

DAVID A. KING Apr. 1988 81 p
(AD-A192516; ACSC-88-1465) Avail: NTIS HC A05/MF A01 CSDL 05/6

The production of written communications is an important and time-consuming activity for most professional organizations. Computer-aided writing offers great potential for increased productivity, quality, and convenience. In addition to word processors, Computer-Aided Writing (CAW) tools include outline processors and prompting programs, electronic dictionaries, style and grammar checkers, logic analyzers, on-line information systems for research, disk-based references, commenting and review software, desktop publishing and typesetting systems, and hypertext systems. The purpose of this research report is to survey the field of Computer-Aided Writing (CAW) tools for use on IBM-compatible Personal Computer (PC) systems. The information presented in this report is intended to acquaint computer resource managers and prospective CAW users with current PC-based CAW technology. Based on an extensive review of recent PC literature and hands-on evaluation of selected CAW products, this report discusses various categories of CAW tools, utility of current products, prospects for future developments, and selection and

planning criteria. The report also specifically addresses the application of CAW technology at the Air Command and Staff College (ACSC) which is the sponsor of this project. GRA

N88-28644# Massachusetts Inst. of Tech., Cambridge.

WALTER USER'S MANUAL (VERSION 1.0)

DAVID K. GIFFORD, ROBERT G. COTE, and DAVID A. SEGAL
Sep. 1987 35 p

(Contract N00014-83-K-0125)

(AD-A192542, MIT/LCS/TR-399) Avail. NTIS HC A03/MF A01
CSCL 12/7

Walter is one of the experimental computer systems that is part of the Boston Community Information System Project. Walter allows you to use a UNIX system (including DEC Vaxes, IBM RTs, and Sun Workstations) connected to the DARPA internet to access a 90-day database of the New York Times. Walter implements a simple, yet powerful, full-text query language that allows you to locate information of interest. This user's manual is designed to tell you everything you need to know to use the Walter system. We have prepared this manual for new and experienced UNIX users alike. Most importantly, we hope the manual will answer all your questions about using the program.

GRA

N88-30333# National Aeronautics and Space Administration.
Ames Research Center, Moffett Field, CA.

**A SHARED-WORLD CONCEPTUAL MODEL FOR
INTEGRATING SPACE STATION LIFE SCIENCES
TELESCIENCE OPERATIONS**

VICKI JOHNSON and JOHN BOSLEY (Bionetics Corp., Moffett Field, Calif.) In NASA, Goddard Space Flight Center, The 1988 Goddard Conference on Space Applications of Artificial Intelligence p 33-44 Aug. 1988

Avail: NTIS HC A19/MF A03 CSCL 09/2

Mental models of the Space Station and its ancillary facilities will be employed by users of the Space Station as they draw upon past experiences, perform tasks, and collectively plan for future activities. The operational environment of the Space Station will incorporate telepresence, a new set of operational modes. To investigate properties of the operational environment, distributed users, and the mental models they employ to manipulate resources while conducting telepresence, an integrating shared-world conceptual model of Space Station telepresence is proposed. The model comprises distributed users and resources (active elements), agents who mediate interactions among these elements on the basis of intelligent processing of shared information; and telepresence protocols which structure the interactions of agents as they engage in cooperative, responsive interactions on behalf of users and resources distributed in space and time. Examples from the life sciences are used to instantiate and refine the model's principles. Implications for transaction management and autonomy are discussed. Experiments employing the model are described which the authors intend to conduct using the Space Station Life Sciences Telepresence Testbed currently under development at Ames Research Center.

Author

N89-14963# University of Southwestern Louisiana, Lafayette
Center for Advanced Computer Studies.

**THE DESIGN OF PC/MISI, A PC-BASED COMMON USER
INTERFACE TO REMOTE INFORMATION STORAGE AND
RETRIEVAL SYSTEMS M.S. Thesis** Final Report, 1 Jul. 1985 -
31 Dec. 1987

WAYNE D. DOMINICK, ed and PHILIP P. HALL 24 Apr 1985
97 p Prepared in cooperation with Southern Univ., Baton Rouge,
LA

(Contract NASW-3846; NGT-19-010-900)

(NASA-CR-184523; NAS 1.26:184523; DBMS NASA/RECON-15)

Avail: NTIS HC A05/MF A01 CSCL 05/2

The amount of information contained in the data bases of large-scale information storage and retrieval systems is very large and growing at a rapid rate. The methods available for assessing this information have not been successful in making the information easily available to the people who have the greatest need for it

This thesis describes the design of a personal computer based system which will provide a means for these individuals to retrieve this data through one standardized interface. The thesis identifies each of the major problems associated with providing access to casual users of IS and R systems and describes the manner in which these problems are to be solved by the utilization of the local processing power of a PC. Additional capabilities, not available with standard access methods, are also provided to improve the user's ability to make use of this information. The design of PC/MISI is intended to facilitate its use as a research vehicle. Evaluation mechanisms and possible areas of future research are described. The PC/MISI development effort is part of a larger research effort directed at improving access to remote IS and R systems. This research effort, supported in part by NASA, is also reviewed

Author

N89-14964# University of Southwestern Louisiana, Lafayette.
Center for Advanced Computer Studies.

**THE DESIGN OF PC/MISI, A PC-BASED COMMON USER
INTERFACE TO REMOTE INFORMATION STORAGE AND
RETRIEVAL SYSTEMS. PRESENTATION VISUALS M.S. Thesis** Final Report, 1 Jul. 1985 - 31 Dec. 1987

WAYNE D. DOMINICK, ed, and PHILIP P. HALL 24 Apr. 1985
31 p Prepared in cooperation with Southern Univ., Baton Rouge,
LA

(Contract NASW-3846; NGT-19-010-900)

(NASA-CR-184524; NAS 1.26:184524; DBMS NASA/RECON-16)

Avail: NTIS HC A03/MF A01 CSCL 05/2

This Working Paper Series entry represents a collection of presentation visuals associated with the companion report entitled, The Design of PC/MISI, a PC-Based Common User Interface to Remote Information Storage and Retrieval Systems, USL/DBMS NASA/RECON Working Paper Series report number DBMS NASA/RECON-15. The paper discusses the following: problem definition, the PC solution, the goals of system design, the design description, future considerations, the research environment, conclusions

Author

N89-19890# Essex Corp., Alexandria, VA

SARSCST (HUMAN FACTORS)

H. MCILVAINE PARSONS In NASA Lyndon B. Johnson Space
Center, 2nd Annual Workshop on Space Operations Automation
and Robotics (SOAR 1988) p 541-552 Nov 1988

Avail: NTIS HC A22/MF A04 CSCL 05/8

People interact with the processes and products of contemporary technology. Individuals are affected by these in various ways and individuals shape them. Such interactions come under the label 'human factors'. To expand the understanding of those to whom the term is relatively unfamiliar, its domain includes both an applied science and applications of knowledge. It means both research and development, with implications of research both for basic science and for development. It encompasses not only design and testing but also training and personnel requirements, even though some unwisely try to split these apart both by name and institutionally. The territory includes more than performance at work, though concentration on that aspect, epitomized in the derivation of the term ergonomics, has overshadowed human factors interest in interactions between technology and the home, health, safety, consumers, children and later life, the handicapped, sports and recreation education, and travel. Two aspects of technology considered most significant for work performance, systems and automation, and several approaches to these, are discussed

Author

N89-20062# Illinois State Univ., Normal Dept of Applied
Computer Science

COMPUTER TECHNOLOGIES AND INSTITUTIONAL MEMORY
Final Report

CHRISTOPHER BELL and ROY LACHMAN (Houston Univ., TX.)
In NASA, Lyndon B. Johnson Space Center, National Aeronautics
and Space Administration (NASA)/American Society for
Engineering Education (ASEE) Summer Faculty Fellowship Program

THE HUMAN INTERFACE

1988, Volume 1 22 p Feb. 1989

Avail: NTIS HC A09/MF A02 CSDL 09/2

NASA programs for manned space flight are in their 27th year. Scientists and engineers who worked continuously on the development of aerospace technology during that period are approaching retirement. The resulting loss to the organization will be considerable. Although this problem is general to the NASA community, the problem was explored in terms of the institutional memory and technical expertise of a single individual in the Man-Systems division. The main domain of the expert was spacecraft lighting, which became the subject area for analysis in these studies. The report starts with an analysis of the cumulative expertise and institutional memory of technical employees of organizations such as NASA. A set of solutions to this problem are examined and found inadequate. Two solutions were investigated at length: hypertext and expert systems. Illustrative examples were provided of hypertext and expert system representation of spacecraft lighting. These computer technologies can be used to ameliorate the problem of the loss of invaluable personnel. Author

N89-20695* Georgia Inst. of Tech., Atlanta. Center for Human-Machine Systems Research.

INTENT INFERRING WITH A MODEL-BASED OPERATOR'S ASSOCIATE

PATRICIA M. JONES, CHRISTINE M. MITCHELL, and KENNETH S. RUBIN *In its* Human-Computer Interaction in Distributed Supervisory Control Tasks 19 p Jan. 1989

(REPT-88-2) Avail: NTIS HC A08/MF A01 CSDL 09/2

A portion of the Operator Function Model Expert System (OFMExpert) research project is described. OFMExpert is an architecture for an intelligent operator's associate or assistant that can aid the human operator of a complex, dynamic system. Intelligent aiding requires both understanding and control. The understanding (i.e., intent inferring) ability of the operator's associate is discussed. Understanding or intent inferring requires a model of the human operator; the usefulness of an intelligent aid depends directly on the fidelity and completeness of its underlying model. The model chosen for this research is the operator function model (OFM). The OFM represents operator functions, subfunctions, tasks, and actions as a heterarchic-hierarchical network of finite state automata, where the arcs in the network are system triggering events. The OFM provides the structure for intent inferring in that operator functions and subfunctions correspond to likely operator goals and plans. A blackboard system similar to that of Human Associative Processor (HASP) is proposed as the implementation of intent inferring function. This system postulates operator intentions based on current system state and attempts to interpret observed operator actions in light of these hypothesized intentions. Author

N89-20696* Georgia Inst. of Tech., Atlanta. Center for Human-Machine Systems Research.

OFMTUTOR: AN OPERATOR FUNCTION MODEL INTELLIGENT TUTORING SYSTEM

PATRICIA M. JONES *In its* Human-Computer Interaction in Distributed Supervisory Control Tasks 45 p Jan. 1989

Avail: NTIS HC A08/MF A01 CSDL 09/2

The design, implementation, and evaluation of an Operator Function Model intelligent tutoring system (OFMTutor) is presented. OFMTutor is intended to provide intelligent tutoring in the context of complex dynamic systems for which an operator function model (OFM) can be constructed. The human operator's role in such complex, dynamic, and highly automated systems is that of a supervisory controller whose primary responsibilities are routine monitoring and fine-tuning of system parameters and occasional compensation for system abnormalities. The automated systems must support the human operator. One potentially useful form of support is the use of intelligent tutoring systems to teach the operator about the system and how to function within that system. Previous research on intelligent tutoring systems (ITS) is considered. The proposed design for OFMTutor is presented, and an experimental evaluation is described. M.G.

N89-20697* Georgia Inst. of Tech., Atlanta. Center for Human-Machine Systems Research.

A SURVEY OF INTELLIGENT TUTORING SYSTEMS: IMPLICATIONS FOR COMPLEX DYNAMIC SYSTEMS

ROSE W. CHU *In its* Human-Computer Interaction in Distributed Supervisory Control Tasks 19 p Jan. 1989

Avail: NTIS HC A08/MF A01 CSDL 09/2

An overview of the research in the field of intelligent tutorial systems (ITS) is provided. The various approaches in the design and implementation of ITS are examined and discussed in the context of problem solving in an environment of a complex dynamic system (CDS). Issues pertaining to a CDS and the nature of human problem solving especially in light of a CDS are considered. An overview of the architecture of an ITS is provided as the basis for the in-depth examination of various systems. Finally, the implications for the design and evaluation of an ITS are discussed. Author

N89-20704* Oak Ridge National Lab., TN.

INCREASING USER-FRIENDLINESS IN AI SYSTEMS

ANURAG AGARWAL and M. L. EMRICH Oct. 1988 31 p

Presented at the National Governor's Association Meeting: Finding the Future Conference, Washington, DC, 12 Dec. 1988

(Contract DE-AC05-84OR-21400)

(DE89-005093; CONF-881249-3) Avail: NTIS HC A03/MF A01

Recent trends have shown a rise in the number of non-technical computer users. This has resulted in increased emphasis on User Systems Interfaces (USI). New technology which has been developed includes: laser/optical mice, touch screens, voice synthesizers, and voice analyzers. This paper details hardware and software that have been the focus of recent research. The implementation of SOFTMAN, a software manager aid is also discussed. As part of its USI, SOFTMAN has each of the above interfaces. Future technologies and research paths will also be discussed. DOE

N89-23198* Los Alamos National Lab., NM. Theoretical Biology and Biophysics Theoretical Div.

SIMULATION AND ANALYSIS OF PHYSICAL MAPPING

KARL SIROTKIN and JOHN JOSEPH LOEHR 1988 22 p

Presented at the Interface Between Computational Science and Nucleic Acid Sequencing, Santa Fe, NM, 12-16 Dec. 1988

(Contract W-7405-ENG-36)

(DE89-009399; LA-UR-89-817, CONF-881276-1) Avail: NTIS HC A03/MF A01

The current talk involves objects smaller than those that are macro-restriction mapped but larger than the bases that are sequenced. Specifically, we describe simulations of the alignment of recombinant lambdaoid and cosmid clones by fingerprinting methods. The purpose of the simulation is to compare methods, as realistically as desired, while preparing for the analysis of actual physical mapping data. Furthermore, we will eventually begin to submit data to the Human Genome Information Resource (HGIR) to exercise its database. A simulation has advantages over a formal mathematical analysis. Not only can a simulation be as realistic as desired (for example by using actual sequences from GenBank(trademark)) but if desired properly, when finished much of the code could be used on actual data. Furthermore, a simulation can be designed to utilize any degree of parameterization, while analyses usually must make simplifying assumptions to minimize the number of parameters. For example, the way this simulation is designed one could, by simply adding a short module, mimic rearrangements that might occur during cloning in order to discover the effect that they would have on the config generating algorithms and to learn how to recognize and deal with such rearrangements. This talk describes the structure and announces the availability of the code for the simulation modules. We tested the method for aligning clones based upon oligonucleotide hybridizing sites comparing its efficacy on actual human DNA sequences from GenBank to its efficacy on random, completely uncorrelated sequence. Surprisingly, its performance was about the same on both sequences. DOE

N89-26470* # FMC Corp., Santa Clara, CA.

AN ARCHITECTURE FOR HEURISTIC CONTROL OF REAL-TIME PROCESSES

P. RAULEFS and P. W. THORNDYKE *In Jet Propulsion Lab., California Inst. of Tech., Proceedings of the Workshop on Space Telerobotics, Volume 1 p 149-154 1 Jul. 1987*

Avail: NTIS HC A16/MF A03 CSCL 09/2

Abstract Process management combines complementary approaches of heuristic reasoning and analytical process control. Management of a continuous process requires monitoring the environment and the controlled system, assessing the ongoing situation, developing and revising planned actions, and controlling the execution of the actions. For knowledge-intensive domains, process management entails the potentially time-stressed cooperation among a variety of expert systems. By redesigning a blackboard control architecture in an object-oriented framework, researchers obtain an approach to process management that considerably extends blackboard control mechanisms and overcomes limitations of blackboard systems. Author

N89-26580* # Maryland Univ., College Park Dept. of Computer Science.

SHARED RESOURCE CONTROL BETWEEN HUMAN AND COMPUTER

JAMES HENDLER and REID WILSON *In NASA. Goddard Space Flight Center, The 1989 Goddard Conference on Space Applications of Artificial Intelligence p 13-19 Apr. 1989 Sponsored by part by ONR, Washington, DC*

Avail: NTIS HC A17/MF A03 CSCL 09/2

The advantages of an AI system of actively monitoring human control of a shared resource (such as a telerobotic manipulator) are presented. A system is described in which a simple AI planning program gains efficiency by monitoring human actions and recognizing when the actions cause a change in the system's assumed state of the world. This enables the planner to recognize when an interaction occurs between human actions and system goals, and allows maintenance of an up-to-date knowledge of the state of the world and thus informs the operator when human action would undo a goal achieved by the system, when an action would render a system goal unachievable, and efficiently replans the establishment of goals after human intervention. Author

N89-26779* # Naval Ocean Systems Center, San Diego, CA Decision Support and Artificial Intelligence Systems Branch

AN ASYNCHRONOUS INTERFACE BETWEEN A NATURAL LANGUAGE QUERY INTERPRETER AND A DATABASE MANAGEMENT SYSTEM Final Report, Feb. - Apr. 1988

L. E. GADBOIS Feb. 1989 22 p
(AD-A206918; NOSC/TD-1482) Avail: NTIS HC A03/MF A01 CSCL 12/5

This report documents computer software which interfaces a Data Base Management System (DBMS) to a program which generates database requests. The software described controls the passing of Structured Query Language (SQL) commands into ORACLE and the capture of its output for return to the program which made the request. The software was designed for a DBMS running on a UNIX computer to be accessed by a program on the same or a remote computer. This remote can be running any hardware or operating system which has File Transfer Protocol (FTP) connection with the UNIX machine. GRA

N84-71658* # Navy Personnel Research and Development Center, San Diego, CA

A SYSTEMATIC APPROACH TO HUMAN FACTORS MEASUREMENT

D. MEISTER Oct 1978 198 p
(AD-A132423; AD-F630038)

N86-70447* # Navy Personnel Research and Development Center, San Diego, CA.

DESIGN CONSIDERATIONS FOR HUMAN-COMPUTER DIALOGUES Technical Note

L. R. WILSON Apr. 1977 22 p
(AD-A159265; AD-E301788; NPRDC-TN-77-10)

DECISION SUPPORT

Helping the decision maker has been a long-time goal of computer experts. But decision making in real time scarcely allows consulting computers, networked databases, models. IRM can at least analyze specific situations, and plan quick-reaction decision making strategies. These approaches may be helpful to you.

A84-21644

MODELING AND ANALYSIS OF TEAMS OF INTERACTING DECISIONMAKERS WITH BOUNDED RATIONALITY

K. I. BOETTCHER and A. H. LEVIS (MIT, Cambridge, MA) Automatica (ISSN 0005-1098), vol. 19, Nov. 1983, p. 703-709. refs

(Contract AF-AFOSR-80-0229)

Copyright

A methodology for analyzing and evaluating alternative organizational structures is presented. An information theoretic framework is used in which each team member is described by a two-stage model consisting of situation assessment and response selection stages as well as interconnections with the rest of the organization. The information processing and decisionmaking load of each team member and the measure of organizational performance are depicted in the performance-workload space as implicit functions of the decision strategies of each individual member. The approach to evaluating organizational structures using the methodology for analysis of an organization consisting of two decisionmakers with bounded rationality. Author

A84-33463

ARIADNE - A KNOWLEDGE-BASED INTERACTIVE SYSTEM FOR PLANNING AND DECISION SUPPORT

A. P. SAGE and C. C. WHITE, III (Virginia, University, Charlottesville, VA) IEEE Transactions on Systems, Man, and Cybernetics (ISSN 0018-9472), vol. SMC-14, Jan.-Feb. 1984, p. 35-47. refs
(Contract N00014-80-C-0542)

Copyright

The development of an interactive planning and decision support process for multiple criteria alternative selection situations is discussed. Probabilities, utility scores for the lowest level attributes, and attribute trade-off weights, i.e., the parameters, can be imprecisely described by set inclusion. Within a specified structural model of the decision situation, the process allows the decisionmaker to iteratively select the mix of parameter value precision and alternative ranking specificity. By selecting this mix, the decisionmaker is able to direct the alternative selection process in an interactive manner, using alternative selection strategies based on behaviorally meaningful dominance search strategies. Emphasis is placed on the motivation of the research and the behavioral relevance of the support process. References in the bibliography provide further analytical and behavioral discussions related to this process. Author

A85-31792

DEVELOPMENTS IN DECISION SUPPORT SYSTEMS

R. H. BONCZEK, C. W. HOSAPPLE, and A. B. WHINSTON (Purdue University, West Lafayette, IN) IN Advances in computers Volume 23. Orlando, FL, Academic Press, Inc., 1984, p. 141-175. refs
(Contract NSF IST-81-08519; NSF ECS-81-16135)

Copyright

A 'Decision Support System' (DSS) is a computerized system which utilizes knowledge about a particular application area to help decision makers working in that area solve ill-structured problems. Ill-structured problems exist in applications related to financial planning, medical diagnosis, operations management, and market planning. The concept and the activities of decision making

DECISION SUPPORT

are discussed. The information-processing system which makes a decision may be human (individual or group), machine, or a system having both human and machine participation. The latter type of decision-making system is of primary interest in the DSS field. The machine-based portion of the decision-making system constitutes typically a decision support for the human portion. A DSS must possess at least one of the seven decision-making abilities and must exercise that ability in some stage of a decision process. Attention is given to the tools for building a DSS, the essential components of a DSS, trends in the DSS field, and future research directions G.R

A88-35463

THE EFFECTS OF DIFFERENT DATA BASE FORMATS ON INFORMATION RETRIEVAL

DEBORAH BOEHM-DAVIS, ROBERT HOLT, MATTHEW KOLL, GLORIA YASTROP, and ROBERT PETERS (George Mason University, Fairfax, VA) IN Human Factors Society, Annual Meeting, 31st, New York, NY, Oct. 19-23, 1987, Proceedings Volume 2, Santa Monica, CA, Human Factors Society, 1987, p. 983-986.

(Contract N00014-85-K-0243)

Copyright

This research examined the effects of three different data-base formats on the information retrieval performance of users. Spatial, tabular, and verbal forms of two data-base domains (airline and thesaurus) were constructed along with questions that required users to search through the data base to determine the correct response. Three types of questions were designed, spatial, tabular, and verbal. The data indicate that users are faster and more accurate in responding to the questions when the format of the information in the data base matches the type of information needed to answer the question. While the importance of matching data base format to query type may seem to be obvious, it would appear that the designers of most current data base systems have not taken this into account Author

A88-46509

THE INVESTIGATIVE TECHNIQUES USED BY THE CHALLENGER COMMISSION TO ADDRESS INFORMATION SYSTEM FAILURES AS THEY RELATED TO THE SPACE SHUTTLE ACCIDENT

RANDY R. KEHRLI (Presidential Commission on the Space Shuttle Challenger, Washington, DC) IN: Information systems: Failure analysis; Proceedings of the NATO Advanced Research Workshop, Bad Windsheim, Federal Republic of Germany, Aug 18-22, 1986 Berlin and New York, Springer-Verlag, 1987, p. 67-72.

Copyright

A general description of the investigative techniques and methodology used by the Challenger Commission is given. Two aspects of the information system failures found to contribute to the accident by the Commission were listed and placed into the EATPUT model: (1) the decision to launch and (2) the failure to track the history of Shuttle flight problems. The techniques used by the Commission to investigate the various EATPUT event states of NASA's information system are identified B.J

A89-27177

A MULTI-SPECTRAL ANALYSIS SYSTEM USING LARGE DATABASES

EDWARD W. BRUGEL, GITTA DOMIK, and STEPHEN A. VOELS (Colorado, University, Boulder) IN: Astronomy from large databases: Scientific objectives and methodological approaches, Proceedings of the Conference, Garching, Federal Republic of Germany, Oct. 12-14, 1987 Garching, Federal Republic of Germany, European Southern Observatory, 1988, p. 3-8

Copyright

The designing, testing, and implementing of a multispectral data analysis system that incorporates several large astronomical data sets is discussed. The system provides interactive scientific analysis and intercomparison of multimission/multispectral data from satellite and groundbased observatories Author

N84-33290# Air Force Inst of Tech, Wright Patterson AFB, OH. School of Systems and Logistics.

AN EVALUATION OF TWO RELIABILITY AND MAINTAINABILITY INFORMATION SYSTEMS M.S. Thesis

L. K. BOCK Jan. 1984 72 p

(AD-A143438; AFIT-LSSR-66-83) Avail. NTIS HC A04/MF A01 CSCL 09/2

Air Force managers require adequate and timely information in order to make effective decisions regarding reliability and maintainability (R&M) issues. Since 1980, at least two Air Force organizations have contracted for additional computer data base systems to improve their R&M data requirements. These data base systems provide real-time maintenance and operational data on certain weapons systems. This study analyzed the output characteristics of these new data base systems to determine if they did provide improved information and comparison with the standard Air Force maintenance and operational data reports. It was shown that the two new data base systems did provide more timely R&M data which resulted in information that allowed for effective and efficient managerial decision making. However, all the timely information available for managerial decisions will be hindered until data input errors are reduced. Author (GRA)

N86-15175# National Aeronautics and Space Administration, Lyndon B. Johnson Space Center, Houston, TX.

IMPROVING MANAGEMENT DECISION PROCESSES THROUGH CENTRALIZED COMMUNICATION LINKAGES

D. F. SIMANTON and J. R. GARMAN *In its R and D Productivity. New Challenges for the US Space Program* p 202-211 1985

Avail. NTIS HC A25/MF A04 CSCL 05/1

Information flow is a critical element to intelligent and timely decision-making. At NASA's Johnson Space Center the flow of information is being automated through the use of a centralized backbone network. The theoretical basis of this network, its implications to the horizontal and vertical flow of information, and the technical challenges involved in its implementation are the focus of this paper. The importance of the use of common tools among programs and some future concerns related to file transfer, graphics transfer, and merging of voice and data are also discussed. Author

N86-22134# Naval Postgraduate School, Monterey, CA A DECISION SUPPORT SYSTEM FOR COST-EFFECTIVENESS ANALYSIS FOR CONTROL AND SECURITY OF COMPUTER SYSTEMS M.S. Thesis

E. A. PREVENAS Sep. 1985 152 p

(AD-A161388) Avail. NTIS HC A08/MF A01 CSCL 09/2

The increasing number of computer failures and crimes has forced managers to tighten the control procedures of their EDP systems. However, the cost of an exhaustive control strategy is often very expensive, and its effectiveness is not guaranteed. This thesis designs and implements a Decision Support System that helps determine optimal control procedures for EDP systems (CEA-DSS). The model base of the proposed DSS consists of various techniques for estimating computer exposures. The latter can be interactively analyzed via a Dialogue interface that supports tabular and graphic outputs. CEA-DSS also provides extensive database management capabilities to keep track of the diverse control problems. It is implemented in PASCAL for the IBM-PC.

GRA

N86-25992# Engineering Research Associates, Inc., Vienna, VA.

SCHEMA-BASED THEORY OF INFORMATION PRESENTATION FOR DISTRIBUTED DECISION MAKING Interim Report

D. F. NOBLE and J. A. TRUELOVE Aug 1985 120 p refs

(Contract Nu0014-84-C-0484)

(AD-A163150; R-028-85) Avail. NTIS HC A06/MF A01 CSCL 05/10

The Schema-Based Theory of Information Presentation for Distributed Decision Making describes a schema structure appropriate for understanding connections between the way that information is presented and its impact on distributed decision

making. The theory suggests a process for determining how information should be presented so that consensus and coordination will be improved and decision conflicts will be reduced. The theory proposes that experienced decision makers select alternatives by mental processes that match the features of the current situation to features of reference situations for which possible alternatives are known to be appropriate. These reference situations may specify particular threat activities and dispositions, own Battle Group objectives, prescribed contingency plan action, and decision behavior of other decision makers to the group. Information presented according to the principles derived from the theory will encourage each decision maker to more fully consider the impact of each action on the objectives of other decision makers. Applying the principles requires that the general schema used by decision makers be determined prior to the time when particular situation-specific information is presented. Given this prior determination, the principles suggest what emphasis needs to be given to specific features and feature relationships in the presentation of the current situation. GRA

N86-28798# Engineering Sciences Data Unit, London (England).

THE COSTS OF NOT HAVING REFINED INFORMATION

A. J. BARRETT *In* AGARD The Value of Information as an Integral Part of Aerospace and Defence R and D Programmes 9 p Jan. 1986
Copyright Avail: NTIS HC A05/MF A01

The adequacy of the information resources, which are called upon for support at decision points in the research-design-production-marketing process, can in part be measured by their scope, the presence or absence of information within that scope and, increasingly, by the extent to which they offer refinement in terms of the timeliness and quality of the information which can be retrieved. Timeliness in the present context relates not so much to the response time of the information system as to the extent to which that system is tuned to the volatility of the information which it contains. Likewise, the quality of information is not to be judged only by its relevance and authenticity but also by the convenience of its form of presentation in the view of the decision maker who has need of it. The main focal points of the paper are the costs, disruption and other losses which arise from a lack of knowledge of previous work, the use of out-of-date technical information and, in particular, the extent to which the use of insufficiently refined numerical data leads to the under-, or over-, design of hardware. These are illustrated by a number of quantified examples. The transition from an industrially based to an information or service based society highlights the growing needs of the R&D decision maker and others for systems which will provide high quality numerical and factual data. However, substantiation of these needs may never be available in terms of evidence of direct future benefits as distinct from evidence of historic losses. More dynamic means of demonstrating the impact of information quality upon the interests of the decision maker must be devised and guidelines for two such projects are suggested. Author

N86-29722# Air Force Inst. of Tech., Wright-Patterson AFB, OH.

A STRUCTURAL OPTIMIZATION METHOD FOR INFORMATION RESOURCE MANAGEMENT Ph.D. Thesis

R. E. PESCHKE Dec. 1985 234 p
(AD-A166420; AFIT/CI/NR-86-12D) Avail: NTIS HC A11/MF A02 CSCL 05/1

The mainstays of management activity and managers have traditionally been the organizational resources of manpower, money, material and machines. The inclusion of these support resources early in the acquisition process has had a significant impact on the support of major systems. However, traditional management of these resources alone, is no longer adequate to insure the successful accomplishment of organizational goals and objectives. Organizational planning must include information and information systems in the early stages of the development process if system activities are to continue to insure mission support. The

application of a multiattribute design methodology is a practical way to describe alternative versions of a proposed information system. This research makes a contribution to the Information Resource Management concept by developing a structured optimization methodology that will allow the designer-planner to efficiently guide the information system design process toward consistently meeting the IRM requirements of the organization. Additionally, this research develops a formal criterion function modeling procedure that evaluates alternative candidate systems through explicit analysis of both qualitative and quantitative criteria. GRA

N87-19913# Massachusetts Inst. of Tech., Cambridge. Dept. of Mechanical Engineering.

OPTIMAL COMBINATION OF INFORMATION FROM MULTIPLE SOURCES, PART 3 Final Report, Mar. 1983 - Jul. 1986

MAX B. MENDEL and THOMAS P. SHERIDAN 31 Jul. 1986 69 p
(Contract N00014-83-K-0193)
(AD-A174726) Avail: NTIS HC A04/MF A01 CSCL 05/8

A computer decision aiding system for debiasing and combining information from multiple sources (e.g., human experts, sensors) is proposed. The algorithm is based on six assumptions that apply when the sources are relatively knowledgeable with respect to the operator on the variable of interest, and the operator is willing to base his evaluation of their performance on a previously selected (finite) sequence of so called calibration variables. It is also assumed that the operator is interested in maximizing gains, that is, he wishes to act in an optimal or Bayesian manner. An experiment with two human sources of information was conducted to evaluate the performance of the aiding system under a variety of loss functions. On a family of bilinear loss functions, the output of the aid was found to perform better than a naive scheme like simply believing the information the two sources gave. The combination rule was also found to perform better than the output to any individual source. Author (GRA)

N87-20128# Massachusetts Inst. of Tech., Cambridge. Man-Machine Systems Lab.

SATISFICING DECISION-MAKING IN SUPERVISORY CONTROL, PART 2 Final Report, Mar. 1983 - Jul. 1986

LEONID CHARNY and THOMAS B. SHERIDAN 31 Jul. 1986 59 p
(Contract N00014-83-K-0193)
(AD-A174631) Avail: NTIS HC A04/MF A01 CSCL 05/1

This paper describes a flexible graphics system GraMAD for aiding a human decision-maker in making a selection out of a discrete set of alternatives while trading off several criteria. Three major components of this selection process, called satisficing, are identified and three modes of information presentation to the decision-maker are studied. Necessary elements of multiple-objective computer aiding systems are discussed. Results of experiments with human subjects working with the GraMAD system are discussed. GRA

N88-20820# Decision Science Consortium, Inc., Falls Church, VA

A PERSONALIZED AND PRESCRIPTIVE DECISION AID FOR CHOICE FROM A DATABASE OF OPTIONS Final Technical Report, Jul. 1983 - Sep. 1986

MARVIN S. COHEN, KATHRYN B. LASKEY, and MARTIN A. TOLCOTT 23 Nov. 1987 71 p
(Contract N00014-83-C-0485, PROJ. F66-701)
(AD-A188726; DSCI-87-18) Avail: NTIS HC A04/MF A01 CSCL 05/8

In many decision making contexts there is a need for aids which cater flexibly to individual users in their preferred ways of organizing information and solving problems, but which guard against potential errors or biases inherent in common approaches to decision making. DSC has developed principles of personalized and prescriptive decision aiding which respond to this need, and which are based on experimental findings and theoretical models in cognitive psychology. In Phase 1 of this project, those principles

DECISION SUPPORT

were applied to the development of an aid for attack submarine approach and attack. In Phase 2, the principles have been generalized and extended to the development of a generic personalized and prescriptive evaluation system. The system incorporates five basic cognitive interface modules to customize the user's interaction with the aid to provide prescriptive guidance, as well as a set of interactive dialogues or guides which blend all five functions in support of specific user-selected decision-making strategies. The aid has been tested and demonstrated in the context of a personnel application. GRA

N89-11408# California Univ., Berkeley. Computer Science Div. **PRECISION-TIME TRADEOFFS: A PARADIGM FOR PROCESSING STATISTICAL QUERIES ON DATABASES** JAIDEEP SRIVASTAVA and DORON ROTEM (California Univ., Berkeley. Lawrence Berkeley Lab.) May 1988 22 p Presented at the 4th International Working Conference on Statistical and Scientific Database Management, Rome, Italy, 21 Jun. 1988 (Contract DE-AC03-76SF-00098) (DE88-012024; LBL-24767; CONF-8806166-1) Avail: NTIS HC A03/MF A01

Conventional query processing techniques are aimed at queries which access small amounts of data, and require each data item for the answer. In case the database is used for statistical analysis as well as operational purposes, for some types of queries a large part of the database may be required to compute the answer. This may lead to a data access bottleneck, caused by the excessive number of disk accesses needed to get the data into primary memory. An example is computation of statistical parameters, such as count, average, median, and standard deviation, which are useful for statistical analysis of the database. Yet another example that faces this bottleneck is the verification of the truth of a set of predicates (goals), based on the current database state, for the purposes of intelligent decision making. A solution to this problem is to maintain a set of precomputed information about the database in a view or a snapshot. Statistical queries can be processed using the view rather than the real database. A crucial issue is that the precision of the precomputed information in the view deteriorates with time, because of the dynamic nature of the underlying database. Thus the answer provided is approximate, which is acceptable under many circumstances, especially when the error is bounded. DOE

N89-13918# Pacific Northwest Lab., Richland, WA. **EXPERIENCES WITH A DATA ANALYSIS MANAGEMENT PROTOTYPE** PAULA J. COWLEY, DANIEL B. CARR, and WESLEY L. NICHOLSON In Colorado State Univ., Computer Science and Statistics. Proceedings of the 18th Symposium on the Interface p 147-150 26 Aug. 1987 Previously announced as N87-11626 Avail: NTIS HC A20/MF A03 CSCL 05/2

An evaluation of a prototype data analysis management system is presented. This system was designed to aid the analyst in keeping track of the course of a data analysis. Evaluated features include capabilities to graphically depict the course of the analysis, to return to previous milestones in the analysis, the ability to use segments of the log that describe the course of the analysis, and the ability to associate both written and spoken documentation with milestones of the analysis. Author

N89-13919# Chicago Univ., IL. **TOOLS FOR DATA ANALYSIS MANAGEMENT** RONALD A. THISTED In Colorado State Univ., Computer Science and Statistics. Proceedings of the 18th Symposium on the Interface p 152-159 26 Aug. 1987 (Contract NSF DMS-84-12233) Avail: NTIS HC A20/MF A03 CSCL 12/6

Interactive statistical computer programs represent one class of tools which have made it easier for statisticians to carry out the computations associated with data analysis. Additional tools, both software and hardware, which can be combined with interactive statistical packages to make it easier for the statistician to implement a personal strategy for analyzing data are discussed

An integrated collection of tools for data analysis is called a computing environment. The DAMSL computing environment which is built around off-the-shelf hardware and software costing less than \$4,000 is described. This environment is designed to alleviate many of the managerial burdens which arise in analyzing data. Author

N89-13995*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA. **THE ENVIRONMENT FOR APPLICATION SOFTWARE INTEGRATION AND EXECUTION (EASIE), VERSION 1.0. VOLUME 2: PROGRAM INTEGRATION GUIDE** KENNIE H. JONES, DONALD P. RANDALL, SCOTT S. STALLCUP (Computer Sciences Corp., Hampton, Va.), and LAWRENCE F. ROWELL Dec. 1988 121 p (NASA-TM-100574; NAS 1.15:100574) Avail: NTIS HC A06/MF A01 CSCL 09/2

The Environment for Application Software Integration and Execution, EASIE, provides a methodology and a set of software utility programs to ease the task of coordinating engineering design and analysis codes. EASIE was designed to meet the needs of conceptual design engineers that face the task of integrating many stand-alone engineering analysis programs. Using EASIE, programs are integrated through a relational database management system. In volume 2, the use of a SYSTEM LIBRARY PROCESSOR is used to construct a DATA DICTIONARY describing all relations defined in the database, and a TEMPLATE LIBRARY. A TEMPLATE is a description of all subsets of relations (including conditional selection criteria and sorting specifications) to be accessed as input or output for a given application. Together, these form the SYSTEM LIBRARY which is used to automatically produce the database schema, FORTRAN subroutines to retrieve/store data from/to the database, and instructions to a generic REVIEWER program providing review/modification of data for a given template. Automation of these functions eliminates much of the tedious, error prone work required by the usual approach to database integration. Author

N89-14473*# Lockheed Missiles and Space Co., Palo Alto, CA. **APPLICATION DEVELOPER'S TUTORIAL FOR THE CSM TESTBED ARCHITECTURE** PHILLIP UNDERWOOD and CARLOS A. FELIPPA (Colorado Univ., Boulder.) Oct. 1988 94 p (Contract NAS1-18444) (NASA-CR-181732; NAS 1.26:181732; LMSC/D878511) Avail: NTIS HC A05/MF A01 CSCL 20/11

This tutorial serves as an illustration of the use of the programmer interface on the CSM Testbed Architecture (NICE). It presents a complete, but simple, introduction to using both the GAL-DBM (Global Access Library-Database Manager) and CLIP (Command Language Interface Program) to write a NICE processor. Familiarity with the CSM Testbed architecture is required. Author

N89-14954*# University of Southwestern Louisiana, Lafayette. Center for Advanced Computer Studies. **CONCEPTS AND IMPLEMENTATIONS OF NATURAL LANGUAGE QUERY SYSTEMS Final Report, 1 Jul. 1985 - 31 Dec. 1987**

WAYNE D. DOMINICK, ed. and I-HSIUNG LIU 1 Jun. 1984 48 p Prepared in cooperation with Southern Univ., Baton Rouge, LA (Contract NASW-3846, NGT-19-010-900) (NASA-CR-184514, NAS 1.26:184514, DBMS.NASA/RECON-6) Avail: NTIS HC A03/MF A01 CSCL 05/2

The currently developed user language interfaces of information systems are generally intended for serious users. These interfaces commonly ignore potentially the largest user group, i.e., casual users. This project discusses the concepts and implementations of a natural query language system which satisfy the nature and information needs of casual users by allowing them to communicate with the system in the form of their native (natural) language. In addition, a framework for the development of such an interface is

also introduced for the MADAM (Multics Approach to Data Access and Management) system at the University of Southwestern Louisiana
Author

N89-15330# Sandia National Labs., Albuquerque, NM
Interconnections Div
DEVELOPING A CONNECTOR SELECTION DEMS USING NIAM (NIJSEN'S INFORMATION ANALYSIS METHODOLOGY)
NICOLE E. SEVIER Sep. 1988 20 p
(Contract DE-AC04-76DP-00789)
(DE89-001658, SAND-88-0272) Avail. NTIS HC A03/MF A01

At Sandia there exist over 1200 qualified electrical connectors that an engineer can choose from for a given application. Currently, engineers select a connector from a small group of familiar connectors. This technique may not select the connector which is best suited for the application. To assist engineers in selecting the most suitable connector from those available, a user friendly, menu driven database was required. Nijssen's Information Analysis Methodology (NIAM), a conceptual information modeling technique, was used to characterize the connector data requirements. NIAM gives the designer techniques for gathering, modeling, and analyzing information. The major benefit of the NIAM was the ability to gain acceptance and approval of the conceptual model from management and users. The conceptual model may then be implemented in any specified database management system. This paper will discuss the development of the connector selection database at Sandia using NIAM.
DOE

N89-15774 Maryland Univ., College Park.
ON QUERY PROCESSING IN DISTRIBUTED DATABASE SYSTEMS Ph.D. Thesis
HYUNCHUL KANG 1987 113 p
Avail. Univ. Microfilms Order No. DA8808565

Processing a query in distributed database systems requires data transmission among the different sites of the computer network. The optimization of data transmission cost is the major concern in distributed query processing. To optimize the amount of data transmission, the semijoin was used as an effective operator for reducing relations before they are transmitted for the final joins. A new approach is proposed for distributed query optimization which is based on combining semijoins and joins. First, simulation results are reported which indicate that such a semijoin-join integrated approach would be more effective than a solely semijoin-based approach. Then, a semijoin-join integrated query optimization technique and an algorithm SMJ+J for generating a semijoin-join program, a sequence of semijoins and/or joins is presented. An optimal semijoin-join program is derived for a single join query, and the single join query optimization is used as the basis for generating an efficient semijoin-join program for a general join query. The performance of the semijoin-join program is evaluated. Some extensions to the proposed optimization technique are also considered.
Dissert. Abstr.

N89-19891# Boeing Aerospace Co., Kennedy Space Center, FL.
ELECTRONIC DATA GENERATION AND DISPLAY SYSTEM
JULES WETEKAMM In NASA. Lyndon B. Johnson Space Center. 2nd Annual Workshop on Space Operations Automation and Robotics (SOAR 1988) p 553-557 Nov 1988
Avail. NTIS HC A22/MF A04 CSDL 05/2

The Electronic Data Generation and Display System (EDGADS) is a field tested paperless technical manual system. The authoring provides subject matter experts the option of developing procedureware from digital or hardcopy inputs of technical information from text, graphics, pictures, and recorded media (video, audio, etc.). The display system provides multi-window presentations of graphics, pictures, animations, and action sequences with text and audio overlays on high resolution color CRT and monochrome portable displays. The database management system allows direct access via hierarchical menus, keyword name, ID number, voice command or touch of a screen pictorial of the item (ICON). It contains operations and maintenance

technical information at three levels of intelligence for a total system.
Author

N89-20717# Illinois Univ., Urbana. Dept. of Computer Science.
MONOTONICALLY IMPROVING APPROXIMATE ANSWERS TO RELATIONAL ALGEBRA QUERIES
KENNETH P. SMITH and J. W. S. LIU 4 Apr. 1989 20 p
(Contract NAG1-613; N00014-87-K-0827)
(NASA-CR-184874; NAS 1.26:184874) Avail. NTIS HC A03/MF A01 CSDL 12/1

We present here a query processing method that produces approximate answers to queries posed in standard relational algebra. This method is monotone in the sense that the accuracy of the approximate result improves with the amount of time spent producing the result. This strategy enables us to trade the time to produce the result for the accuracy of the result. An approximate relational model that characterizes approximate relations and a partial order for comparing them is developed. Relational operators which operate on and return approximate relations are defined.
Author

N89-21538# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
THE ENVIRONMENT FOR APPLICATION SOFTWARE INTEGRATION AND EXECUTION (EASIE) VERSION 1.0 VOLUME 1: EXECUTIVE OVERVIEW
LAWRENCE F. ROWELL and JOHN S. DAVIS (Computer Sciences Corp., Hampton, VA) Mar. 1989 41 p
(NASA-TM-100573; NAS 1.15:100573) Avail. NTIS HC A03/MF A01 CSDL 09/2

The Environment for Application Software Integration and Execution (EASIE) provides a methodology and a set of software utility programs to ease the task of coordinating engineering design and analysis codes. EASIE was designed to meet the needs of conceptual design engineers that face the task of integrating many stand-alone engineering analysis programs. Using EASIE, programs are integrated through a relational database management system. Volume 1, Executive Overview, gives an overview of the functions provided by EASIE and describes their use. Three operational design systems based upon the EASIE software are briefly described.
Author

N89-21705 Purdue Univ., West Lafayette, IN
INFORMATION ACQUISITION FOR MODEL CONSTRUCTION: AN INTEGRATIVE, DECISION-THEORETIC PERSPECTIVE Ph.D. Thesis
RAMAKRISHNAN PAKATH 1988 140 p
Avail. Univ. Microfilms Order No. DA8900713

Most mathematical models of decision making assume that either complete and accurate input parameter information is freely and readily available or that one must resort to probabilistic modeling when dealing with uncertain information. Very often, the decision maker has the time and resources needed for acquiring information. Further, practicing decision makers favor easily understood and implemented satisfying (satisfying + sacrificing) solution methods for the decision models constructed, as opposed to complicated optimization techniques. This is a key requirement for decision support system design. The use of meta models that guide the decision model specification process are proposed and appropriate decision strategies are suggested. Such meta models assume the decider can choose from several information completeness levels with the consequential effects on both information costs and decision quality. Examples of the construction and solution of such meta models in the context of static and dynamic decision scenarios are presented.
Dissert. Abstr.

N89-22327# Ohio State Univ., Columbus
AERONAUTICAL DECISION MAKING: COCKPIT RESOURCE MANAGEMENT Final Report
RICHARD S. JENSEN Jan 1989 179 p Prepared for Systems Control Technology, Inc., Arlington, VA

DECISION SUPPORT

(Contract DTFA01-80-C-10080)
(AD-A205115; DOT/FAA/PM-86/46) Avail. NTIS HC A09/MF
A01 CSCL 05/8

Aviation accident data indicate that the majority of aircraft mishaps are due to judgment error. This training manual is part of a project to develop materials and techniques to help improve pilot decision making. Training programs using prototype versions of these materials have demonstrated substantial reductions in pilot error rates. The results of such tests were statistically significant and ranged from approximately 10 to 50 percent fewer mistakes. This manual is designed to explain the risks associated with flying activities involving multi-crew aircraft, the underlying behavioral causes of typical accidents, and the effects of stress on pilot decision making. The objective of this material is to enhance interpersonal communication and to facilitate effective leadership and coordination between crewmembers. It provides a sophisticated approach to developing concerted action based on optimal decision making. Several Cockpit Resources Management (CRM) principles are presented in the manual, included are delegation of responsibilities, prioritization, vigilance and monitoring, joint discussion and planning, and receptive leadership techniques. This manual is one of a series on Aeronautical Decision Making (ADM) prepared for the following pilot audiences: Student and Private, Instructor, Instrument, Helicopter, and Multi-crew. GRA

N89-22532# Air Force Inst of Tech., Wright-Patterson AFB, OH. School of Systems and Logistics.

STRUCTURED REQUIREMENTS DETERMINATION FOR INFORMATION RESOURCES MANAGEMENT M.S. Thesis

TAMARA C. MACKENTHUN Dec. 1988 102 p
(AD-A204764; AFIT/GIR/ 88D-8) Avail. NTIS HC A06/MF
A01 CSCL 12/7

The purpose of this thesis was to provide the Information Resources Management System designer with a framework on which to structure the decisions which must be made in order to translate rapidly changing information needs into plans for Information Resources Management Systems which implement rapidly changing technology. The HyperCard programming environment and the Design/IDEF diagramming tool were used to develop a design support system which guides the Information Resources Management (IRM) system designer through the requirements determination stage of Dr. Benjamin Ostrofsky's Design, Planning and Development Methodology. This system consists of the Design, Planning and Development (D, P and D) Stack, a Help stack, and a User's Manual. The system guides the IRM system designer through the requirements determination process, assists in the collection of data, and organizes that data into a form which can be subjected to objective analysis and optimization. The system currently supports only the requirements determination phase of a complete Information Resources Management System design methodology. It is intended to serve as input to future development of a complete system to assist the Information Resources Management System designer with all phases of the design process. GRA

N89-70498 Office of Science and Technology, Washington, DC RESEARCH AND DEVELOPMENT STRATEGY FOR HIGH PERFORMANCE COMPUTING

20 Nov. 1987 33 p
(PB89-120778) Avail. NTIS

APPLICATIONS TO SPECIAL AREAS

We all work in specialized subject and mission areas. Is an application in an activity that looks pertinent actually applicable? Brainstorming techniques indicate that approaches far afield might have a chance. Here are some applications.

A85-14170 DATA DISSEMINATION AND ONLINE NUMERIC DATABASE SYSTEMS

H. MINDLIN (Battelle Columbus Laboratories, Columbus, OH)
SAMPE Quarterly (ISSN 0036-0821), vol. 16, Oct. 1984, p. 34-38.
refs
Copyright

The development of handbooks, databanks, and databases is described through the steps required in the collection, review, and analysis procedures. Examples of current handbooks and databanks are presented. The end use of a database is a key factor in determining what data will be saved, how it will be analyzed, and how it will be presented in the final product. Even if databases are developed from databanks, it is useful if the source data and online analysis programs are accessible to the end user. Databases are increasing in use and will eventually replace the off-the-shelf handbook. Author

A85-26824 A SYSTEMS APPROACH TO ATE DOCUMENTATION

V. RILEY, D. BAUM, and R. VESTEWIG (Honeywell Systems and Research Center, Minneapolis, MN) IN AUTOTESTCON '83, Proceedings of the Conference, Fort Worth, TX, November 1-3, 1983. New York, Institute of Electrical and Electronics Engineers, Inc., 1983, p. 336-341.
Copyright

The time savings provided by a Voice Interactive Maintenance Aiding Device (VIMAD) for automated equipment testing applications are considered. The VIMAD is an information storage and presentation device which tailors the form of the presentation to both the type of information required and the task to be performed. At the core of the system is a helmet mounted, or handheld CRT display attached remotely to a microcomputer. The helmet holds a microphone for voice input to the computer. When technical documentation of a system under test is needed, a voice command signals the microcomputer to display the drawing on the CRT. The system can store up to 15,000 color images on a single optical disk, with random access to any frame in under half a second. In the future, the development of smaller high resolution versions of the VIMAD may make it possible to present detailed written information. A functional block diagram of the VIMAD system is provided. I.H.

A85-41058# PILOTS WARY OF TACTICAL INFORMATION SYSTEMS

R. DEMEIS Aerospace America (ISSN 0740-722X), vol. 23, July 1985, p. 70-73.
Copyright

The Joint Tactical Information Distribution System (JTIDS) employs frequency hopping techniques to furnish real time, secure, anti-jam digital data transfer and voice communications to remote terminals, automatically distinguishing between friend and foe and collecting navigation data relative to a master platform, such as an AWACS aircraft. In addition to the prospective air engagement advantages anticipated for JTIDS by the U.S. Air Force, the cost and complexity that have become associated with the system to date and the operational difficulties cited by pilots acquainted with test units of the JTIDS system are discussed. O.C.

A85-44992 INTEGRATED TERRAIN ACCESS/RETRIEVAL SYSTEM

G. O. BURNHAM (Texas Instruments, Inc., Lewisville) IN NAECON 1984, Proceedings of the National Aerospace and

Electronics Conference, Dayton, OH, May 21-25, 1984. Volume 1. New York, IEEE, 1984, p. 97-105
Copyright

The ITARS program objective is to develop and demonstrate a flightworthy digital terrain access and retrieval system, implemented with a flexible VHSIC-based modular architecture. The ITARS will interface to and support a variety of avionics subsystems and functions including TF/TA, navigation, threat avoidance, and displays. As such, the ITARS will be ideally situated to take advantage of and bring together major current-technology thrusts: digital map technology, VHSIC technology, and Air Force Pave Pillar/ASID programs. To successfully merge these three technologies into the ITARS, the program must systematically address several issues such as: (1) how digital terrain data are used to support pilot needs including TF/TA, navigation, threat avoidance, and displays; (2) what is the digital map technology required to support these functions; (3) what flightworthy system implementation best supports these requirements. This paper presents the approach, schedule, and results from preliminary studies conducted to support Digital Map technology required for ITARS. Specific topics to be discussed include data base requirements, alternate digital terrain data sources, and mission needs. Author

A86-20669* # National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.

THE PILOT CLIMATE DATA SYSTEM

M. G. REPH, L. A. TREINISH, and P. H. SMITH (NASA, Goddard Space Flight Center, Greenbelt, MD) IN: Spatial information technologies for remote sensing today and tomorrow, Proceedings of the Ninth Pecora Symposium, Sioux Falls, SD, October 2-4, 1984. Silver Spring, MD, Institute of Electrical and Electronics Engineers, Inc., 1984, p. 132-139. refs

The Pilot Climate Data System (PCDS) is an interactive scientific information management system for locating, obtaining, manipulating, and displaying climate-research data. The PCDS was developed to manage a large collection of data of interest to the National Aeronautics and Space Administration's (NASA) research community and currently provides such support for approximately twenty data sets. In order to provide the PCDS capabilities, NASA's Goddard Space Flight Center (NASA/GSFC) has integrated the capabilities of several general-purpose software packages with specialized software for reading and reformatting the supported data sets. These capabilities were integrated in a manner which allows the PCDS to be easily expanded, either to provide support for additional data sets or to provide additional functional capabilities. This also allows the PCDS to take advantage of new technology as it becomes available, since parts of the system can be replaced with more powerful components without significantly affecting the user interface. Author

A87-13162

COMPUTERIZED NUMERIC DATABASES FOR MATERIALS PROPERTIES

J. G. KAUFMAN IN: International SAMPE Symposium and Exhibition, 31st, Los Angeles, CA, April 7-10, 1986, Proceedings Covina, CA, Society for the Advancement of Material and Process Engineering, 1986, p. 1488-1498. refs
Copyright

The National Materials Property Data Network has been established in order to furnish engineers and scientists with on-line access to sources of material property data with which selection and design decisions can be made. In order to present a comprehensive view of the opportunities and limitations that must influence judgements on the reliability and quality attributable to those sources, information is presently provided on a number of the sources in tabular form. Attention is given to (1) average, minimum and individual test results, (2) the degree to which individual sets of data are available and retrievable, (3) the available amount of documentation on the test methods by which the given data were generated, and (4) the extent to which data have been evaluated by materials/testing experts with respect to their

consistency and reliability. It is noted that while most data sources cover metals, only a few cover polymers, and no public systems have been found which cover ceramics or composites O.C.

A87-13182

EXPERIENCE, METHODS AND PROSPECTS IN COMMERCIAL ONLINE MATERIALS DATA DISTRIBUTION

H. D. CHAFE IN: International SAMPE Symposium and Exhibition, 31st, Los Angeles, CA, April 7-10, 1986, Proceedings Covina, CA, Society for the Advancement of Material and Process Engineering, 1986, p. 1798-1806.
Copyright

The 'Metals Datafile' experimental data bank of numerical property values based on the metals literature was developed with online network availability in mind, and encompasses one segment limited to metallic compositions and a second that includes a total of 21 of such material property values as tensile strength, yield point, shear, impact and rupture strengths, hardness, modulus of elasticity, fatigue life, and fracture toughness. Physical properties such as density, specific heat and thermal and electrical characteristics are also included. In the full test year of 1984, an average of 29 organizations accessed the Datafile each month, more than two-thirds of this usage is noted to have originated outside the U.S., with at least 10 different countries being represented per month O.C.

A87-13537*

GPS/JTIDS COMPATIBILITY

R. C. CUMMING, R. L. HEINZE, and R. R. MOSER, JR (SRI International, Menlo Park, CA) IN: ION, National Technical Meeting, Long Beach, CA, January 21-23, 1986, Proceedings Washington, DC, Institute of Navigation, 1986, p. 35-40.

A technical evaluation shows that a GPS manpack receiver can function without degradation when Position Location and Reporting System, and Joint Tactical Information Distribution System (JTIDS), transmitters are operating within close proximity under the experimental conditions. In the laboratory tests, the GPS receiver was shown to acquire synchronization with four satellites while +30 dBm of JTIDS power was coupled into its antenna port in less than one minute, and a similar test demonstrated good performance with the output filter removed. During on-the-air tests which used a GRID Compass computer to display the system parameters, the GPS unit acquired the four satellites in less than two minutes under interference conditions and with the transmitters running R R

A87-48577* # National Aeronautics and Space Administration, Washington, DC.

NASA SPACE INFORMATION SYSTEMS OVERVIEW

DANA L. HALL (NASA, Washington, DC) AIAA and NASA, International Symposium on Space Information Systems in the Space Station Era, Washington, DC, June 22, 23, 1987 7 p refs

(AIAA PAPER 87-2189) Copyright

A major objective of NASA space missions is the gathering of information that when analyzed, compared, and interpreted furthers man's knowledge of his planet and surrounding universe. A space information system is the combination of data gathering, data processing, and data transport capabilities that interact to provide the underlying services that enable that advancement in understanding. Past space projects have been characterized by rather disjoint data systems that often did not satisfy user requirements. NASA has learned from those experiences, however, and now is conceptualizing a new generation of sophisticated, integrated space information systems suitable to the wide range of near future space endeavors. This paper examines the characteristics of recent data systems and, based upon that characterization, outlines the scope and attributes of future systems. A description is offered of the information system for the Space Station Program as one real example of such advanced capabilities. Author

APPLICATIONS TO SPECIAL AREAS

A87-48600* National Aeronautics and Space Administration, Washington, DC.

TECHNICAL AND MANAGEMENT INFORMATION SYSTEM (TMIS)

TIMOTHY R. RAU (NASA, Washington, DC) AIAA and NASA, International Symposium on Space Information Systems in the Space Station Era, Washington, DC, June 22, 23, 1987. 10 p. (AIAA PAPER 87-2217) Copyright

The TMIS goals developed to support the Space Station Program (SSP) mission requirements are outlined. The TMIS will provide common capabilities to all SSP centers and facilitate the flow of technical and management information throughout the program as well as SSP decision-making processes. A summary is presented of the various TMIS phases. K.K.

A87-49213

SATISFYING THE INFORMATION REQUIREMENTS OF AN AIRCRAFT T&E CENTER

DANNY WEDDLE (U.S. Navy, Naval Air Test Center, Patuxent River, MD) IN: Society of Flight Test Engineers, Annual Symposium, 17th, Washington, DC, Aug. 10-14, 1986, Proceedings. Lancaster, CA, Society of Flight Test Engineers, 1986, p. 6.2-1 to 6.2-6. refs Copyright

Consideration is given to the way in which the Naval Air Test Center attempts to satisfy information requirements connected with the development of a technical baseline for the system being tested and the use of key decision information for managing and operating the center. On the technical side, laboratories and data processing systems have been established to produce test information in a simulated or real environment. On the management side, a Computer Assisted Management System project and prototype information systems have been established to satisfy the needs of management at all levels. In addition, an Information Resources Management Office has been established whose task is to develop corporate information policy. B.J.

A87-53207* Woods Hole Oceanographic Inst., MA.

A SYSTEMS-APPROACH TO THE DESIGN OF THE EOS DATA AND INFORMATION SYSTEM

ROBERT R. P. CHASE (Woods Hole Oceanographic Institution, MA) IN: IGARSS '87 - International Geoscience and Remote Sensing Symposium, Ann Arbor, MI, May 18-21, 1987, Digest. Volume 2. New York, Institute of Electrical and Electronics Engineers, Inc., 1987, p. 887-891. (Contract NAGW-946) Copyright

The task of designing a data and information system responsive to the needs of Eos users is stratified by level and approached with contemporary systems design practices. Appropriate systems design principles are applied at the conceptual design level in this paper. A functional, architectural design is described in terms of elemental composition, top-level functions, and external and internal interfaces. The functional validity of this design has been tested and verified through the use of realistic user scenarios consistent with existing plans for the 1990s, the Space Station era. Technologic and management impediments to the development of the requisite data and information system for Eos are examined and a consistent methodology for developing this system is discussed. Author

A87-53230* National Aeronautics and Space Administration, Goddard Space Flight Center, Greenbelt, MD.

THE LAND ANALYSIS SYSTEM (LAS) - A GENERAL PURPOSE SYSTEM FOR MULTISPECTRAL IMAGE PROCESSING

STEPHEN W. WHARTON and YUN-CHI LU (NASA, Goddard Space Flight Center, Greenbelt, MD) IN: IGARSS '87 - International Geoscience and Remote Sensing Symposium, Ann Arbor, MI, May 18-21, 1987, Digest. Volume 2. New York, Institute of Electrical and Electronics Engineers, Inc., 1987, p. 1081-1086. refs Copyright

The present, general-purpose Land Analysis System (LAS) for

image processing furnishes a comprehensive set of functions for the manipulation of MSS data; the initial version has more than 240 functions and utilities ranging from pixel manipulation to complex classification. A LAS user's guide describes each such function in terms of purpose, input parameters, illustrative examples, algorithms, error messages, and user codes. The LAS source code is so distributed as to simplify system maintenance; the Transportable Application Executive is employed as the user interface, thereby accommodating both expert and novice users by means of menus and tutored prompting. O.C.

A88-15851* National Aeronautics and Space Administration, Washington, DC.

SP/CE STATION INFORMATION SYSTEM - CONCEPTS AND INTERNATIONAL ISSUES

R. B. WILLIAMS, DAVID PRUETT, and DANA L. HALL (NASA, Space Station Program Office, Washington, DC) IAF, International Astronautical Congress, 38th, Brighton, England, Oct. 10-17, 1987. 10 p. refs (IAF PAPER 87-76) Copyright

The Space Station Information System (SSIS) is outlined in terms of its functions and probable physical facilities. The SSIS includes flight element systems as well as existing and planned institutional systems such as the NASA Communications System, the Tracking and Data Relay Satellite System, and the data and communications networks of the international partners. The SSIS strives to provide both a 'user friendly' environment and a software environment which will allow for software transportability and interoperability across the SSIS. International considerations are discussed as well as project management, software commonality, data communications standards, data security, documentation commonality, transaction management, data flow cross support, and key technologies. K.K.

A88-15906* National Aeronautics and Space Administration, Washington, DC.

A PROPOSED APPLICATIONS INFORMATION SYSTEM - CONCEPT, IMPLEMENTATION, AND GROWTH

DUDLEY G. MCCONNELL (NASA, Office of Space Science and Applications, Washington, DC), CARROLL A. HOOD, and M. KRISTINE BUTERA (Science Applications International Corp., Washington, DC) IAF, International Astronautical Congress, 38th, Brighton, England, Oct. 10-17, 1987. 10 p. refs (IAF PAPER 87-156) Copyright

This paper describes a newly developed concept within NASA for an Applications Information System (AIS). The AIS would provide the opportunity to the public and private sectors of shared participation in a remote sensing research program directed to a particular set of land-use or environmental problems. Towards this end, the AIS would offer the technological framework and information system resources to overcome many of the deficiencies that end-users have faced over the years such as limited access to data, delay in data delivery, and a limited access to data reduction algorithms and models to convert data to geophysical measurements. In addition, the AIS will take advantage of NASA developments in networking among information systems and use of state of the art technology, such as CD Roms and optical disks for the purpose of increasing the scientific benefits of applied environmental research. The rationale for the establishment of an AIS, a methodology for a step-wise, modular implementation, and the relationship of the AIS to other NASA information systems are discussed. Author

A88-38690* Jet Propulsion Lab., California Inst. of Tech., Pasadena.

SATELLITE DATA MANAGEMENT FOR EFFECTIVE DATA ACCESS

PATRICK D. HOGAN and THOMAS L. KOTLAREK (California Institute of Technology, Jet Propulsion Laboratory, Pasadena) IN: International Conference on Data Engineering, 3rd, Los Angeles, CA, Feb. 3-5, 1987, Proceedings. Washington, DC, IEEE Computer Society Press, 1987, p. 494-500. Copyright

The management of data generated from satellite missions has not always led to effective access of that data by the scientific community. NASA has tried to alleviate this problem for ocean scientists, by initiating a program, the NASA Ocean Data System (NODS). The menu-based user interface that NODS employs allows a user to make request and receive answers within a short time of accessing the system. A catalog system, which holds information about oceanographic data sets may be queried to determine the suitability of a particular data set. Once a candidate data set is found, the user is directed to the person or place which actually holds the data. NODS also has an archive system that holds data from ocean-observing satellites. The archive may be queried to obtain a manageable data subset that can be delivered in a useful form. Author

A89-10945#

THE POTENTIALS AND CHALLENGES AFFORDED BY SPOT-1 DATA

THOMAS M. LILLESAND (Wisconsin, University, Madison) IN: International Symposium on Remote Sensing of Environment, 21st, Ann Arbor, MI, Oct. 26-30, 1987, Proceedings. Volume 1. Ann Arbor, MI, Environmental Research Institute of Michigan, 1987, p. 307-316. Research supported by the University of Wisconsin and William and Flora Hewlett Foundation. refs

A program to assess the utility of SPOT-1 data for natural resource applications is examined. Images of Madison, Green Bay, and Spooner, Wisconsin were analyzed to assess the use of SPOT data for generalized land-cover mapping, preparing large-scale image maps, forest classification, and water-quality analysis. Preliminary results of the analysis are presented. Two data-processing procedures are discussed: the digital merger of SPOT 10-m panchromatic and 2 m multispectral data using intensity-hue-saturation color-space transformations, and the development of a semiautomated training-sample selector designed to reduce image-analysis times in multispectral-image classification efforts. It is found that SPOT-1 data are useful across a broad range of natural-resource applications. R.B.

A89-10968#

APPLICATIONS OF MULTISPECTRAL VIDEO FOR NATURAL RESOURCE ASSESSMENT

J. H. EVERITT, D. E. ESCOBAR, and P. R. NIXON (USDA, Agricultural Research Service, Weslaco, TX) IN: International Symposium on Remote Sensing of Environment, 21st, Ann Arbor, MI, Oct. 26-30, 1987, Proceedings. Volume 1. Ann Arbor, MI, Environmental Research Institute of Michigan, 1987, p. 597-618. refs

The development and the application of video imaging systems for natural resource assessment by the USDA, Weslaco, Texas are discussed. Special attention is given to three video systems: a multispectral black-and-white four-band system with visible/NIR sensitivity, a multispectral false-color system that acquires selectable three-band color composite imagery generated by an encoder and its black-and-white narrowband image components, and a black-and-white monoband system with mid-IR sensitivity. It is shown that the near-real-time imagery provided by these systems can be used to detect differences among many agricultural and rangeland resource variables such as plant species, cotton-root rot infestations, soil variations, phytomass levels, burned areas, and ant mounds. I.S.

A89-11809

EXPERIMENTS WITH TEMPORAL REASONING APPLIED TO ANALYSIS OF TELEMETRY DATA

W. A. PERKINS and A. AUSTIN (Lockheed Artificial Intelligence Center, Palo Alto, CA) IN: Space Station automation III; Proceedings of the Meeting, Cambridge, MA, Nov. 2-4, 1987. Bellingham, WA, Society of Photo-Optical Instrumentation Engineers, 1987, p. 39-46. refs Copyright

A temporal reasoning capability was implemented in a generic expert system shell to increase the flexibility of knowledge representation for a variety of applications. Telemetry data were

monitored via satellite (the Space Telescope), and use was made of the rotor controlled electronics bearing having such attributes as actual temperature of the bearing, wheel speed, and motor current. The use of time tags associated with attribute values makes it possible to diagnose different problems occurring at different times with the same component. K.K.

A89-12863

A SYSTEM FOR MANAGEMENT, DISPLAY AND ANALYSIS OF OCEANOGRAPHIC TIME SERIES AND HYDROGRAPHIC DATA

N. N. SOREIDE and S. P. HAYES (NOAA, Pacific Marine Environmental Laboratory, Seattle, WA) IN: Conference on Satellite Meteorology and Oceanography, 3rd, Anaheim, CA, Feb. 1-5, 1988, Preprints. Boston, MA, American Meteorological Society, 1988, p. J20-J22. Copyright

The paper presents the design criteria and system overview of EPIC, a system developed for the management, display, and analysis of oceanographic time series and hydrographic data collected as part of NOAA's climate research programs (e.g., EPOCS and TOGA). The system incorporates an easy-to-use, interactive user interface with sophisticated data management techniques, an efficient data file format, a suite of analysis and display programs, and procedures for maintaining and updating the data base. B.J.

A89-27851

LOCAL RESOURCE UTILIZATION AND INTEGRATION INTO ADVANCED MISSION'S LSS

FEROLYN T. POWEL (Life Systems, Inc., Cleveland, OH) SAE, Intersociety Conference on Environmental Systems, 18th, San Francisco, CA, July 11-13, 1988, 10 p. refs (SAE PAPER 881053) Copyright

Key design drivers of the Life Support System (LSS) of advanced manned space missions are duration, distance from earth and cost. All drive the LSS design toward the elimination of expendables and resupply requirements (from earth). Local resource utilization will be required to completely eliminate resupply requirements from earth. Also, in some instances, it may be advantageous to utilize local resources instead of regenerative technologies. This paper provides an introduction and overview to local resource utilization related to the LSS of advanced missions. Author

A89-28460#

SOFTWARE ASPECTS OF EARTH OBSERVATION

C. WAYNE SEBERA (Ford Aerospace Corp., San Jose, CA) and ALLAN JAWORSKI (Ford Aerospace Corp., Seabrook, MD) AIAA, Aerospace Sciences Meeting, 27th, Reno, NV, Jan. 9-12, 1989, 9 p. refs (AIAA PAPER 89-0779) Copyright

The Earth Observation Systems planned for 1990 through 2015 confronts software developers with significant challenges. Evolving from systems of earlier decades these new design concepts are no longer single spacecraft with ground station, but rather are constellations of multiple satellites and networked ground stations of hundreds of installations. Additionally, sensors will continue to grow more sophisticated, and scientific progress will involve combinations of data fused from diverse temporal, spatial and spectral sources. The software aspects for these new systems are more challenging than ever before. Changes are needed in software development strategies, in providing more capable tools, and in establishing more effective standards if economic factors are to be contained. Author

A89-31939

THE EOS DATA AND INFORMATION SYSTEM - CONCEPTS FOR DESIGN

JOHN A. DUTTON (Pennsylvania State University, University Park) IEEE Transactions on Geoscience and Remote Sensing (ISSN 0196-2892), vol. 27, March 1989, p. 109-116. refs Copyright

A functional architecture for the earth observation system (EOS) is presented and a variety of management issues are surveyed.

APPLICATIONS TO SPECIAL AREAS

including longevity, coordination with agencies, scientific programs, and other nations, incorporation of existing data, and the importance of effective and responsible scientific governance by the users. The author concludes that, to meet its objectives, the system must facilitate the development of abstract higher-level data structures and data manipulation languages. If that occurs, it is possible that the EOS data and information system will stimulate novel and more powerful modes of thought about the information that portrays the evolution of the earth system. I.E.

A89-31941* Colorado Univ., Boulder

TOWARD A COMPLETE EOS DATA AND INFORMATION SYSTEM

ROBERT R. P. CHASE (Colorado, University, Boulder) IEEE Transactions on Geoscience and Remote Sensing (ISSN 0196-2892), vol. 27, March 1989, p. 125-131. refs (Contract NAGW-946; NAGW-1121; NAGW-1191) Copyright

Based on NASA EOS data panel analyses, an architectural concept is described in terms of elemental composition, top-level functions, and external and internal interfaces. This concept has been evaluated through the use of realistic user-generated scenarios consistent with existing plans for the 1990s and the Space Station. Developmental approaches for the requisite EOS data and information system are presented and a hybrid methodology for implementing this system is discussed. I.E.

A89-41152

CONCEPT FOR A SATELLITE-BASED GLOBAL RESERVE MONITORING SYSTEM

DIANA L. MOSSMAN, RALPH W. KIEFER, and BECKY J. BROWN (Wisconsin, University, Madison) IN: 1988 ACSM-ASPRS Annual Convention, Saint Louis, MO, Mar. 13-18, 1988, Technical Papers. Volume 4. Falls Church, VA, American Congress on Surveying and Mapping and American Society for Photogrammetry and Remote Sensing, 1988, p. 1-10. refs Copyright

A prototype system is being designed to monitor nature reserves on a global basis using satellite data. This system will have both a central global monitoring facility and a microcomputer-based system that could be used at reserve headquarters for local reserve monitoring. The central system data handling will include monitoring through digital image interpretation. K.K.

A89-41157

USE OF A GEOGRAPHIC INFORMATION SYSTEM (GIS) TO IMPROVE PLANNING FOR AND CONTROL OF THE PLACEMENT OF DREDGED MATERIAL

CYNTHIA A. ABRAHAMSON, ANDREW J. BRUZEWICZ (U.S. Army, Corps of Engineers, Rock Island, IL), and MARK O. JOHNSON (U.S. Army, Construction Engineering Research Laboratory, Champaign, IL) IN: 1988 ACSM-ASPRS Annual Convention, Saint Louis, MO, Mar. 13-18, 1988, Technical Papers. Volume 4. Falls Church, VA, American Congress on Surveying and Mapping and American Society for Photogrammetry and Remote Sensing, 1988, p. 60-68. Copyright

The use of spatial data and a data base management system to plan for the disposal of dredged material has been studied. The geographic resources data analysis support system (GRASS) software developed at the U.S. Army Construction Engineering Research Laboratory was used on a digital data base developed for the Keithsburg lower dredge cut located 20 miles north of Burlington, Iowa, on the Mississippi River. The use of a National High Altitude Program (NHAP) color IR aerial photograph transparency was digitized with 5- by 5-meter pixels and rectified for use as a base map. K.K.

A89-49447#

DIGITAL MOCKUP

MICHAEL A. RICH (Boeing Commercial Airplanes, Seattle, WA) AIAA, AHS, and ASEE, Aircraft Design, Systems and Operations

Conference, Seattle, WA, July 31-Aug. 2, 1989. 6 p (AIAA PAPER 89-2086) Copyright

The basic mock-up functions of the engineering design and verification for a commercial aircraft, the manufacturing support, and the control of mockup data are discussed together with methods for a digital mockup. It is shown that the use of digital mock-ups can eliminate the need of physical mock-ups on sections of the aircraft. Based on results from several small-scale digital mock-up activities, it is shown that significant cost savings can be achieved by reducing the flow time during the integrated design/build process. The inaccuracies of the CATIA CAD/CAM system's modeling capabilities for complex parts are demonstrated and the need for model-construction standards is emphasized. I.S.

N84-16078# Army Construction Engineering Research Lab., Champaign, IL.

AN INTERACTIVE SOILS INFORMATION SYSTEM. USERS MANUAL Final Report

W. D. GORAN Sep. 1983 29 p (AD-A133480, CERL-TR-N-163) Avail. NTIS HCA03/MFA01 CSCL 05/2

This report describes and provides basic instructions for using the Soils Information Retrieval System (SIRS), which was designed for efficient retrieval, analysis, and use of soils data from the U.S. Department of Agriculture's Soil Conservation Service (SCS). SIRS is an experimental subsystem of the Environmental Technical Information System which was developed by the U.S. Army Construction Engineering Research Laboratory and contains a number of computer-based information systems for use in environmental planning and management. SIRS provides the user with data compiled by SCS from various soil series throughout the United States. As new information is obtained, the data is updated and inserted in SIRS. This report provides information on how to access and use SIRS, describes the type of data provided by each of the three components of SIRS, and describes the various system commands. Author (GRA)

N84-18112# Washington Univ., Seattle.

SCIENTIFIC AND TECHNICAL INFORMATION SYSTEM FOR THE WASHINGTON STATE LEGISLATURE

L. MEYER May 1983 11 p refs (Contract NSF ISP-80-19579) (PB84-100650, NSF/ISP-83-016) Avail. NTIS HC A03/MF A01 CSCL 05/2

A scientific and technical information system is suggested for implementation by the Washington State legislature. The system would use legislative staff to process scientific and technical information in a regular, controlled, and organized manner, and would provide legislators with only the scientific and technical information they need. The system has three major components: (1) identification of scientific and technical components of public issues and the relevant sources of information and expertise; (2) mobilization of scientific and technical resources so that questions can be assimilated and responses issued systematically; and (3) communication of issues, advice, information, and analyses from the scientific and technical resource base to legislators. GRA

N84-19174# Air Force Inst. of Tech., Wright-Patterson AFB, OH. Foreign Technology Div.

THE AUTOMATED INFORMATION RETRIEVAL SYSTEM IN THE FIELD OF SCIENCE AND SCIENCE POLICY-AWION

B. KRYGIER 9 Nov. 1983 26 p Transl. into ENGLISH from Zagadnienia Inform. Nauk. (Poland), no. 2(29), 1976 p. 61-79 (AD-A135565; FTD-ID(RS)-1527-83) Avail. NTIS HC A03/MF A01 CSCL 05/2

The scope (subject), task, and function of Poland's automated information system for science (AWION) are characterized. Topics covered include the information source for the system and set organization; the science and science policy thesaurus; the general basis of data processing; conditions for functioning of the AWION system; and the linking of AWION with domestic and foreign information systems in the field of social sciences. Author

N84-21412* # Maryland Univ, College Park. Dept. of Computer Science.

METHOD FOR ACCESSING DISTRIBUTED HETEROGENEOUS DATABASES

B. E. JACOBS /In NASA, Washington NASA Admin Data Base Management Systems, 1983 p 89-104 Apr. 1984
 Avail: NTIS HC A08/MF A01 CSCL 05/2

A scenario of relational, hierarchical, and network data bases is presented and a distributed access view integrated data base system (DAVID) is described for uniformly accessing data bases which are heterogeneous and physically distributed. The DAVID system is based on data base logic so that the relational approach is generalized to the heterogeneous approach. The global data manager is explained as are global data manipulation languages which can operate on all the data bases and can query the data dictionary and the data directory. A.R.H.

N84-22211* # Boeing Computer Services Co., Seattle, WA
MANAGING GEOMETRIC INFORMATION WITH A DATA BASE MANAGEMENT SYSTEM

R. P. DUBE /In NASA, Langley Research Center Computer-Aided Geometry Modeling p 241-254 Mar. 1984 refs
 Avail: NTIS HC A17/MF A03 CSCL 09/2

The strategies for managing computer based geometry are described. The computer model of geometry is the basis for communication, manipulation, and analysis of shape information. The research on integrated programs for aerospace-vehicle design (IPAD) focuses on the use of data base management system (DBMS) technology to manage engineering/manufacturing data. The objectives of IPAD is to develop a computer based engineering complex which automates the storage, management, protection, and retrieval of engineering data. In particular, this facility must manage geometry information as well as associated data. The approach taken on the IPAD project to achieve this objective is discussed. Geometry management in current systems and the approach taken in the early IPAD prototypes are examined.

E A K

N84-22402* # National Aeronautics and Space Administration Langley Research Center, Hampton, VA.

OPTICAL INFORMATION PROCESSING FOR AEROSPACE APPLICATIONS 2

R. L. STERMER, comp Washington Mar 1984 261 p refs
 Conf. held in Hampton, Va., 30-31 Aug. 1983
 (NASA-CP-2302, L-15754, NAS 1.55 2302) Avail: NTIS HC A12/MF A02 CSCL 20/6

Current research in optical processing, and determination of its role in future aerospace systems was reviewed. It is shown that optical processing offers significant potential for aircraft and spacecraft control, pattern recognition, and robotics. It is demonstrated that the development of optical devices and components can be implemented in practical aerospace configurations.

N84-23295# Air Force Space Div, Los Angeles, CA
THE MICROCOMPUTER IN THE ACQUISITION ENVIRONMENT
Final Report

M. ECUNG /In AF Business Research Management Center Proc of the Fed. Acquisition Res. Symp with Theme p 5-11 1983
 (AD-P002748) Avail: NTIS HC A24/MF A04 CSCL 15/5

Headquarters Space Division in Los Angeles took the initiative in adopting the microcomputer as a viable tool to improve overall operations. After a little better than 18 months there are over 200 terminals on station. Most are split between 4 and 8 user multiprocessor systems. Our primary goal in both microcomputer hardware and software acquisition is to stay away from proprietary products that can lock the user into a particular vendor for systems support and modification. The result of our November 1981 design decision was hardware configured around the Z80 microprocessor using the S-100 (IEEE-696) Bus. Standardized user interface was included by specifying a keyboard configuration of NASA'S Jet propulsion Laboratory design with 40 programmable function keys. Eight inch single side, single density floppy disk drives (IBM format

3740) were chosen because they represent the one industry wide standard in disk formatting. Though most of this work was done in a Contracting office the conclusions are relevant to all. We feel the experience of our period of experimentation with Office Automation can aid other offices considering taking this course of action. We have had both positive and negative result with our effort, but the overall conclusion is that. (1) micro-computer office automation can not be avoided, and (2) we have only scratched the surface of its applications in the acquisition environment.

Author (GRA)

N84-23298# Air Force Systems Command, Wright-Patterson AFB, OH.

THE ACQUISITION MANAGEMENT INFORMATION SYSTEM: FRIEND OR FOE? Final Report

C. R. COOK /In AF Business Research Management Center Proc. of the Fed. Acquisition Res. Symp with Theme p 23-27 1983

(AD-P002751) Avail: NTIS HC A24/MF A04 CSCL 15/5

AFSC's Acquisition Management Information System (AMIS) is a complex, extensive computer system containing detailed information on over 61,000 contracts. This paper describes the history and development of AMIS, plus recent actions taken by the Directorate of Contract Data Systems to improve system user-friendliness. A survey of field activities revealed several unsatisfied user needs, especially in data input/output. The Distributed Processing for Contractual Input (DPCI) system was designed and programmed to fill some of these needs. The genesis and growth of DPCI is treated, including software design and hardware acquisition. The paper also covers a fundamental change in management philosophy--expanded participation of system users in establishing and prioritizing system development and change. A new AMIS Users Group was established to advance the effective use of AMIS through the interchange of information concerning system design, use, operation and maintenance. More emphasis is also being placed on improving data base accuracy and completeness. Management education has been stressed. The paper explains steps taken in these and other areas and comments on future system changes to further enhance user-friendliness.

Author (GRA)

N84-24501# Southwest Texas State Univ, San Marcos
PROJECT FIRST (FACULTY INFORMATION AND RESEARCH SERVICE FOR TEXAS) TECHNICAL DESCRIPTION OF PROJECT AND RESULTS

S. GROGGAN 1983 9 p
 (Contract NSF ISP-79-16510)
 (PB84-161629, NSF/ISP-83025) Avail: NTIS HC A02/MF A01 CSCL 05/2

The background and objectives of the Faculty Information and Research Service for Texas (FIRST) are presented. The FIRST network consists of campus liaisons located at participating institutions of higher education in Texas. This network functions as an inquiry/response system designed to provide legislators with information quickly, in a readily usable format, and upon request. FIRST is composed of an advisory committee, a director, and an assistant.

GRA

N84-26468* # National Aeronautics and Space Administration, Washington, DC

THE PILOT LAND DATA SYSTEM: REPORT OF THE PROGRAM PLANNING WORKSHOPS

Jul 1984 167 p refs
 (NASA-TM-86250, NAS 1.15 86250) Avail: NTIS HC A08/MF A01 CSCL 05/2

An advisory report to be used by NASA in developing a program plan for a Pilot Land Data System (PLDS) was developed. The purpose of the PLDS is to improve the ability of NASA and NASA sponsored researchers to conduct land-related research. The goal of the planning workshops was to provide and coordinate information and concept development between the land related science and computer science disciplines, to discuss the architecture of the PLDS, requirements for information science technology, and system

APPLICATIONS TO SPECIAL AREAS

evaluation. The findings and recommendations of the Working Group are presented. The pilot program establishes a limited scale distributed information system to explore scientific, technical, and management approaches to satisfying the needs of the land science community. The PLDS paves the way for a land data system to improve data access, processing, transfer, and analysis, which land sciences information synthesis occurs on a scale not previously permitted because of limits to data assembly and access. E.A.K.

N84-28451# Defense Technical Information Center, San Diego, CA. MATRIS Office.

PROTOTYPE DEVELOPMENT OF AN INFORMATION-SHARING AND DECISION SUPPORT SYSTEM FOR THE MANPOWER PERSONNEL AND TRAINING COMMUNITY

J. OXMAN, L. RICHARDS, and L. LOUGHNANE *In* AF Academy Proc. of the 9th Symp. on Psychol. in the DOD p 371-375 Apr 1984

(AD-P003310) Avail: NTIS HC A99/MF E06 CSCL 05/1

The availability of up-to-date and reliable data on the substance and funding of Research and Development efforts within the Manpower Personnel and Training (MPT) community, and the valid linkage of such data through a systems approach, are important aids to researchers and managers in the Department of Defense. The Manpower and Training Research Information System (MATRIS) is a computerized, information-sharing and Decision Support System (DSS) designed to provide such aids to those involved with the conduct and/or fiscal management of Department-of-Defense-sponsored, people-related Research and Development pursuits. Although already in operation, the evolution of MATRIS continues within the framework of the prototype development model. The prototype development process of MATRIS, the structure and content of its data base, and the services and products which the system makes possible, are described. Author (GRA)

N84-31741# California Univ., Santa Barbara. Remote Sensing Research Unit.

NASA PILOT LAND DATA SYSTEM

J. E. ESTES, J. L. STAR, Principal Investigators, and J. FRANKLIN *In* its Activities of the Remote Sensing Inform Sci Res. Group 6 p 1 May 1984 ERTS

Avail: NTIS HC A07/MF A01 CSCL 05/2

Project development and planning for a Pilot Land Data System (PLDS) are discussed. The PLDS supplies basic information, data management, and data processing capabilities to the land research community. Topics on design and implementation, user requirements, and project management are examined. The scenarios developed thusfar are also included. M A C.

N84-33060# Applied Modeling, Inc., Woodland Hills, CA. **DESIGN, TEST, AND EVALUATION OF AN AIR FORCE ENVIRONMENTAL MODEL AND DATA EXCHANGE Final Report, Sep. 1982 - Sep. 1983**

M. R. ALBERTSON and K. T. TRAN Tyndal AFB, Fla AF Engineering and Services Lab. Apr. 1984 29 p (Contract F41689-82-C-0068)

(AD-A143226; AFESC/ESL-TR-84-14) Avail: NTIS HC A03/MF A01 CSCL 09/2

This report documents development of a prototype computer system designed to assist environmental quality staff at an Air Force major command. The computer system, an integration of current technology, permits error detection and high-speed processing for modeling, simulation studies, and network operations. Functionally designed to meet novice user requirements, the multiuser system can be inexpensively expanded to accommodate larger workloads. The capabilities of the prototype system meet data base access and extraction requirements for capture and subsequent manipulation of information and environmental quality data needed to perform environmental assessments. The prototype can serve as a test bed for lead-in applications, locally defined processing, and network operations. Author (GRA)

N84-33099# Lawrence Livermore National Lab., CA Technology Information System.

AN ONLINE DIRECTORY OF DATABASES FOR MATERIAL PROPERTIES

V. E. HAMPEL, W. A. BOLLINGER, C. A. GAYNOR (Control Data Corp.), and J. J. OLDANI May 1984 122 p refs Presented at the 9th Intern CODATA Conf., Jerusalem, 24-28 Jun. 1984 (Contract W-7405-ENG-48)

(DE84-013210; UCRL-90276; CONF-8406139-1) Avail: NTIS HC A06/MF A01

An online directory of databases of material properties on the Technology Information System at Lawrence Livermore National Laboratory (LLNL/TIS) is described. This directory is intended to provide interactive access to scientific and technical databases available to the public that contain information pertaining to nuclear, atomic, molecular, physical, chemical, and mechanical properties of substances. In addition to the 101 data files previously are reported. The information is updated with more than 38 numeric databases and predictive systems in these fields. In addition to describing the contents of the databases, updated information is provided on the availability of the databases and their online access over public telephone and data networks. Some of the numeric databases are directly accessible by authorized users via the TIS Intelligent Gateway Processor at LLNL (TIS/IGP), with self-guiding procedures for the downloading, merging, post-processing, and graphical/statistical analysis of data. DOE

N84-33279# National Aeronautics and Space Administration Langley Research Center, Hampton, VA.

NASA METROLOGY INFORMATION SYSTEM: A NEMS SUBSYSTEM

E. S. GERMAN, JR., F. A. KERN, R. P. YOW (Planning Research Corp.), and E. PETERSON (Planning Research Corp.) *In* NASA, Washington NASA Admin. Data Base Management Systems, 1984 p 89-112 Sep. 1984

Avail: NTIS HC A07/MF A01 CSCL 05/2

The NASA Metrology Information Systems (NMIS) is being developed as a standardized tool in managing the NASA field Center's instrument calibration programs. This system, as defined by the NASA Metrology and Calibration Workshop, will function as a subsystem of the newly developed NASA Equipment Management System (NEMS). The Metrology Information System is designed to utilize and update applicable NEMS data fields for controlled property and to function as a stand alone system for noncontrolled property. The NMIS provides automatic instrument calibration recall control, instrument historical performance data storage and analysis, calibration and repair labor and parts cost data, and instrument user and location data. Nineteen standardized reports were developed to analyze calibration system operations. R.J.F.

N84-33295# National Academy of Sciences - National Research Council, Washington, DC. Joint Data Panel.

SOLAR-TERRESTRIAL DATA ACCESS DISTRIBUTION AND ARCHIVING Final Report

Feb. 1984 43 p refs Sponsored in part by NOAA and the US Air Force

(NASA-CR-173906; NAS 1.26:173906; PB84-195361) Avail: NTIS HC A03/MF A01 CSCL 05/2

It is recommended that a central data catalog and data access network (CDC/DAN) for solar-terrestrial research be established, initially as a NASA pilot program. The system is envisioned to be flexible and to evolve as funds permit, starting from a catalog to an access network for high-resolution data. The report describes the various functional requirements for the CDC/DAN, but does not specify the hardware and software architectures as these are constantly evolving. The importance of a steering committee, working with the CDC/DAN organization, to provide scientific guidelines for the data catalog and for data storage, access, and distribution is also stressed. GRA

N84-34319# Committee on Science and Technology (U.S. House).

THE ROLE OF INFORMATION TECHNOLOGY IN EMERGENCY MANAGEMENT

Washington GPO 1984 159 p Hearings before the Subcomm. on Invest. and Oversight of the Comm. on Sci. and Technol., 98th Congr., 1st Sess., No. 63, 16-17 Nov. 1983

(GPO-29-457) Avail: Subcommittee on Investigations and Oversight

The ability of the government to anticipate and respond to emergencies (crises) is assessed with emphasis on the adequacy of existing warning systems, ability to predict emergencies, response time, and sufficiency of current technology. The Federal Emergency Management Agency (FEMA) is described and pertinent issues are discussed, including: The cooperative use of information technology by governmental agencies and the private sector; the value of simulating emergency situations; establishment and utilization of analyst work stations; the current effectiveness of emergency operation centers; and other public policy issues.

S.B.

N84-34376# National Aeronautics and Space Administration, Washington, DC.

PLANETARY DATA WORKSHOP, PART 2

Oct. 1984 133 p Workshop held in Greenbelt, Md., 29 Nov. - 1 Dec. 1983 2 Vol

(NASA-CP-2343-PT-2; NAS 1.55:2343-PT-2) Avail: NTIS HC A07/MF A01 CSCL 03/2

Technical aspects of the Planetary Data System (PDS) are addressed. Methods and tools for maintaining and accessing large, complex sets of data are discussed. The specific software and applications needed for processing imaging and non-imaging science data are reviewed. The need for specific software that provides users with information on the location and geometry of scientific observations is discussed. Computer networks and user interface to the PDS are covered along with Computer hardware available to this data system.

N84-34377# National Aeronautics and Space Administration, Washington, DC.

DATABASE MANAGEMENT

In its Planetary Data Workshop, Pt. 2 p 148-166 Oct. 1984

Avail: NTIS HC A07/MF A01 CSCL 03/2

Management of the data within a planetary data system (PDS) is addressed. Principles of modern data management are described and several large NASA scientific data base systems are examined. Data management in PDS is outlined and the major data management issues are introduced.

R.S.F.

N85-12434# Institute of Oceanographic Sciences, Birkenhead (England). Marine Information and Advisory Service

INTERNATIONAL BANKING OF SATELLITE AND IN-SITU WAVE DATA BY THE MARINE INFORMATION AND ADVISORY SERVICES (MIAS)

M. T. JONES and A. R. TABOR In ESA ERS-1 Radar Altimeter Data Prod. p 91-98 Aug. 1984 refs

Avail: NTIS HC A12/MF A02

The role of the Marine Information and Advisory Service in the international cataloguing and banking of instrumentally collected wave data and its function as the Responsible National Oceanographic Data Centre (Waves) designated by the International Oceanographic Data Exchange Working Committee of the Intergovernmental Oceanographic Commission are described. Data holdings, and data banking and retrieval methods are outlined. Aspects of satellite-recorded wave data are examined, and suggestions for the way in which such data should be banked, indexed, and retrieved are proposed

Author (ESA)

N85-12791# International City Management Association, Washington, DC

DESIGN OF A SCIENTIFIC INFORMATION COLLATION AND DISSEMINATION SYSTEM, VOLUMES 1 THRU 3 Final Technical Report

G. J. HOETMER, A. C. PAUL, and N. CARSON 28 Jun. 1984 203 p

(Contract EMW-C-0877)

(AD-A146002) Avail: NTIS HC A10/MF A02 CSCL 05/2

The purpose of this study is to: (1) determine the scientific and technological information needs of the emergency management community, and (2) explore the options available to the Federal Emergency Management Agency to coordinate or develop a mechanism to provide this information.

GRA

N85-12794# World Wildlife Fund, Inc., Washington, DC

CORPORATE USE OF INFORMATION REGARDING NATURAL RESOURCES AND ENVIRONMENTAL QUALITY

R. E. TRAIN 16 May 1984 100 p refs Sponsored in part by Council on Environmental Quality

(PB84-222736) Avail: NTIS HC A05/MF A01 CSCL 13/2

Findings and recommendations from a one-year study of the corporate use of information regarding natural resources and environmental quality are presented. Personal interviews were conducted with 229 information users at 45 of America's largest corporations, trade associations and private information companies. In addition, 110 information users participated in a written survey.

GRA

N85-13677# Hawaii Univ., Honolulu. Inst. of Geophysics.

ARCHIVING AND EXCHANGE OF A COMPUTERIZED MARINE SEISMIC DATABASE: THE ROSE DATA ARCHIVE SYSTEM

S. L. LATRAILLE Dec. 1983 145 p refs

(DE84-901453; HIG-83-3) Avail: NTIS HC A07/MF A01

A central data exchange facility was organized at Hawaii Institute of Geophysics to manage seismic data collected during the Rivera Ocean Seismic Experiment off the western coast of Mexico. Prior to that experiment, wide consultation was made and much effort was expended in the establishment of a uniform, yet flexible, data exchange format. The participating institutions provided their data to the facility where the data were cataloged and distributed. The processes and computer programs used to catalog, store and distribute the ROSE seismic data are described.

DOE

N85-24788 George Washington Univ., Washington, DC.

EVALUATING THE APPROPRIATENESS OF MICROCOMPUTERS FOR LITIGATION DOCUMENT MANAGEMENT USING THE ANALYTIC HIERARCHY PROCESS Ph.D. Thesis

H. A. AMIN 1984 229 p

Avail: Univ. Microfilms Order No. DA8428944

Attorneys involved in large cases have availed themselves of mainframe computers for speed and ease in document management. A modifiable evaluative methodology was developed that would enable a small to mid-sized law firm to evaluate whether the microcomputer, as compared to the manual method, could economically and technically manage case-related documents involved in its litigation support efforts. The Analytic Hierarchy Process (AHP) was applied to develop this evaluative methodology. The requirements of a litigation document management system were researched and specifications for the microcomputer and manual methods of necessary document management were developed. Expert Choice, a software package was used for automating the AHP. Data collection was accomplished through a questionnaire sent to size-relevant law firms, interviews with litigation support consultants, and working sessions with selected lawyers.

Dissert. Abstr.

N85-28942# Applied Systems Inst., Inc., Washington, DC

AVIONICS DATA BASE USERS MANUAL Final Report

J. MCGOWAN, D. J. WON, and D. VANETTEN Jan 1985 117 p

(Contract DTFA01-83-Y-30629)

(AD-A153810; FAA-APO-85-5) Avail: NTIS HC A06/MF A01 CSCL 01/3

This manual describes the uses, structure, and operating procedures-including data retrieval, entry and special functions-for the Avionics Data Base. This data base provides detailed data for

APPLICATIONS TO SPECIAL AREAS

avionics currently available for both air carrier and general aviation aircraft. Specific information contained in the data base includes price, weight, dimensions, manufacture, manufacturer's address and telephone number, Technical Standard Order documentation, and ATA Specification 100 data. The Avionics Data Base was created using Microm's R:Base Series 4000 Data Base Management System on the IBM Personal Computer. It contains three files or relations as they are referred to in this document. These relations are: Avionics - the relation that contains model specifications. Manufact - the relation that contains address and telephone number for the manufacturers. TSOREF - the relation that contains the Technical Standard Order (TSO) title, location, publication date and source document(s) for each TSO. Author (GRA)

N85-30972# Naval Surface Weapons Center, Dahlgren, VA.
SAFEORD: SAFETY OF EXPLOSIVE ORDNANCE DATABANK Final Report
 F. J. HANZEL Jul. 1983 12 p
 (AD-A154058; NSWC/MP-83-183) Avail: NTIS HC A03/MF A01 CSCL 09/2

The need for a centrally located databank to store and rapidly retrieve safety information pertaining to Naval explosive ordnance, explosive materials, and weapons systems and components in the Fleet and under development is emphasized daily by urgent requests for this type of data. Instant availability of the necessary data can save lives, time, and money and prevent loss of fleet capability. The ability to obtain these data rapidly, accurately, and economically enhances tremendously the operational effectiveness of the fleet Navy Systems Commands. Working under a NAVSEA Safety Division SEATASK, the System Safety Division developed a functional databank in 1969 capable of storing and providing rapid retrieval of naval explosive ordnance safety data. However, vastly increased demands for faster retrieval, greater simplicity of use, and faster rate of endowment resulted in a critical need restructuring SAFEORD. Restructuring of the Safety of Explosive Ordnance Databank (SAFEORD) includes replacement and additions to the hardware and restructuring of the Computer Software Programs. Hardware changes include replacement of the microfiche camera, fiche printer and developer, and fiche reader-printer and the addition of the CYBER 170/720 computer and an on-line computer terminal that provides the capability to retrieve weapon systems environmental safety test data in matrix format. Restructuring of the software provides a capability to retrieve documents by data and/or author. GRA

N85-30973# Naval Postgraduate School, Monterey, CA
DESIGN AND IMPLEMENTATION OF AN INTELLIGENCE DATABANK M.S. Thesis
 J. E. JANG Dec. 1984 104 p
 (AD-A154095) Avail: NTIS HC A06/MF A01 CSCL 09/2

This thesis presents the design and implementation of the Intelligence Databank system. A database management system must be used in Intelligence System in order to increase end-user productivity, decrease staff effort, enable the work to be done more efficiently, and permit end-user management more authority and responsibility. The semantic data base model was chosen as the method for designing the data base. The SDM is a high-level semantics-based data base description and structuring formalism for data base design and enhances useability of data base system. Using the output of SDM in the intelligence data base, the records are rearranged in order to relational DBMS. The Intelligence data base is implemented using the ORACLE relational DBMS. Author (GRA)

N85-34545# California Univ., Davis Signal and Image Processing Lab.
A MODEL FOR GRAPHICS INTERFACE TOOL DEVELOPMENT
 K. I. JOY In Canadian Information Processing Society Graphics Interface 1985 p 159-165 1985 refs
 Avail: NTIS HC A19/MF A03

A Problem Solving Environment (PSE) is an integrated system that supports the solution of a given problem, or a set of related problems Paramount in the development of such environments is

the design, specification and integration of user interface tools that communicate between the system and the user. The interaction with tool parameters, which in many applications CAD/CAM, Imaging Systems, image Processing, are represented by graphical data. A user-interface tool development system in which both textural and graphical display, and interaction techniques are integrated under a single model which is described allows the user to interact with tool parameters in either graphical or textural modes, and to have the parameters displayed in the manner most relevant to the problem set. E.A.K.

N85-35459# Geological Survey, Alexandria, VA.
FEDERAL MINERAL LAND INFORMATION SYSTEM Abstract Only

R. L. KLECKNER In *its* USGS Res. on Mineral Resources, 1985 p 65-66 1985
 Avail: NTIS HC A05/MF A01

The U.S. Geological Survey is developing the Federal Mineral Land Information System (FMLIS), which will allow land managers, policy makers, and others to rapidly retrieve, display, and analyze minerals information on Federal lands at regional, State, and National levels. This capability is being developed in order to input, manipulate, analyze, and output digital data through a geographic information system (GIS). A GIS is a tool for integrating and analyzing spatial data functions with a GIS allow for changes in map scale and projection, data editing, registration and overlay, selection, retrieval, and display of data tabulation of acreages; and measurement of distances. In an interactive environment, the user can rapidly analyze data, examine alternatives, and test hypotheses. Author

N86-16917# Naval Postgraduate School, Monterey, CA.
DESIGN AND IMPLEMENTATION OF A PERSONNEL DATABANK M.S. Thesis

B. BUYUKONER and Y. OZIN Jun. 1985 157 p
 (AD-A159388) Avail: NTIS HC A08/MF A01 CSCL 09/2

This thesis deals with the design considerations for a personnel database system. It introduces the important concepts related to the analysis and design phases of a database system. Two types of data models, namely conceptual and implementation models, are described, particularly concentrating on the Semantic Data Model (SDM) for conceptual and the Relational Data Model for implementation. The Semantic Data Model is used to indicate the entities and relationships between those entities for the Personnel Database. After the completion of this process, the SDM design is converted into a corresponding relational database which is implemented using the ORACLE Database Management System. GRA

N86-17222# Sandia National Labs., Albuquerque, NM.
SANDIA COMPUTERIZED SHOCK COMPRESSION BIBLIOGRAPHICAL DATABASE

J. S. WILBECK, C. E. ANDERSON, J. C. HOKANSON, J. R. ASAY, D. E. GRADY, R. A. GRAHAM, and M. E. KIPP 1985 16 p
 Presented at the EXPLOMET '85 - International Conference on Metallurgical Applications of Shock Wave and High Strain-rate Phenomena, Portland, Oreg., 28 Jul. 1985 Prepared in cooperation with Winzen International, Inc., San Antonio, Tex. and Southwest Research Inst., San Antonio, Tex.
 (Contract DE-AC04-76DP-00789)
 (DE85-018542; SAND-85-0309C, CONF-850770-10) Avail: NTIS HC A03/MF A01

A searchable and updateable bibliographical database is being developed which will be designed, controlled, and evaluated by working technical experts in the field of shock-compression science. It will emphasize shock-compression properties in the stress region of a few tens of GPa and provide a broad and complete base of bibliographical information on the shock-compression behavior of materials. Through the operation of technical advisors, the database provides authoritative bibliographical and keyword data for use by both the inexperienced and expert user. In its current form, it consists of: (1) a library of journal articles, reports, books, and symposia papers in the areas of shock physics and shock

mechanics; and (2) a computerized database system containing complete bibliographical information, exhaustive keyword descriptions, and author abstracts for each of the documents in the database library. DOE

N86-19263# National Academy of Engineering, Washington, DC.

INFORMATION TECHNOLOGIES AND SOCIAL TRANSFORMATION Final Report

B. R. GUILLE 1985 183 p
(PB85-240521; ISBN-0-309-03529-5; LC-85-4830) Copyright
Avail: NTIS HC A09/MF A01 CSDL 05/2

Information technologies are perhaps the most aggressive technologies of the current age, generating progress, change, and turbulence in many branches of industry and in the lives of organizations and individuals. The symposium that produced this volume brought scholars of technology and society together with technologists, social scientists, and representatives from the industrial, legal, and public sectors to discuss the interaction of information technology with social institutions. The topics addressed including a review of recent developments and likely futures in information technology, a comparison of information technology to historical developments in other technologies, and discussion of the interaction of information technology with businesses, homes, property rights in information, and various hierarchies of social organization. GRA

N86-22130# California Inst. of Tech., Pasadena.
ADVANCED TECHNOLOGY UNIT TRAINING AND MANAGEMENT SYSTEM (ATUTMS). USER'S GUIDE Final Report, Jan. 1984 - Jun. 1985

T. ANTZAK, A. BENSON, and T. IBBOTT 14 Jul. 1985
319 p
(Contract NAS7-918)

(NASA-CR-176643; NAS 1.26:17643; AD-A161002,
ARI-RN-85-71) Avail: NTIS HC A14/MF A02 CSDL 05/9

A computer-based management information system was designed to assist unit training at the battalion level. A prototype system was successfully implemented and made operational within a host battalion of the U.S. Army personnel in the use of this system. ATUTMS uses the relational database management system, INGRES, to record information and to produce reports needed for battalion management. INGRES is utilized to store, add, change, and delete data, and to generate reports. The relational database includes the three functional areas of the battalion: Personnel, Training and Logistics. Word processing is accomplished on ATUTMS by using a software program called MUSE. MUSE consists of a powerful text editor, a spelling checker, and the capability to print documents on either a dot-matrix printer or the system letter-quality printer. Useful tools available on the ATUTMS computer system, in addition to the database management system and word processing, are MAIL and PHONE. Using these tools, the user can communicate with other users on-line or send messages to be read later. The ATUTMS hardware is based on a central computer located in the battalion headquarters building. Terminals are distributed throughout the battalion facilities to make them easily available to users. The central computer is a VAX 11/750. GRA

N86-24215# Navy Personnel Research and Development Center, San Diego, CA.

DEVELOPMENT OF A COMPUTER-MANAGED READINESS ASSESSMENT SYSTEM Final Report, Jul. 1982 - Sep. 1984

W. F. THODE and P. G. BULETZA Dec 1985 55 p
(AD-A162931, NPRDC-TR-86-8) Avail: NTIS HC A04/MF A01 CSDL 05/9

Readiness of operational units, especially Fleet Air Reconnaissance Squadron TWO (VQ-2), is difficult to assess, particularly during operational cycles when the units are fulfilling their missions. This effort was conducted to develop a readiness training assessment system for VQ-2 to provide accurate, timely, and efficient assessments of the operational readiness of aircrew personnel while maintaining the highest possible state of readiness

to perform the squadron's mission. The readiness training system for maintaining readiness and training data for VQ-2 aircrew personnel consists of: (1) a matrix for the EP-3E and the EA-3B aircraft of all the events that affect the readiness of the personnel assigned to the 10 crew positions in the EP-3E and the 5 crew positions in the EA-3B for each of the four VQ-2 mission areas; (2) a computer-managed system to enter, process, store, and produce the readiness training manual that contains all VQ-2's references on training and readiness. Author (GRA)

N86-24226# Naval Ocean Research and Development Activity, Bay Saint Louis, MS.

THE GEONAMES PROCESSING SYSTEM FUNCTIONAL DESIGN SPECIFICATION. VOLUME 4: ADVANCED SYMBOL PROCESSING Final Report

G. LANGRAN Mar. 1985 45 p
(AD-A161874; NORDA-101) Avail: NTIS HC A03/MF A01 CSDL 09/2

This report describes the Geonames Processing System attributes and serves as a basis for understanding between the user and the developer. The subsystems referred to are: Advanced Symbol Processing, Advanced Type Placement, Geographic Names Data Base, and Automated Alphanumeric Data Entry System. Contents: Introduction-Overview of Geonames Processing System; Advanced Symbol Processing Overview; Word Processing; Data Base Manipulation; Output Processing; Job Management; File Management; Processing Flow: Data Sets; Interfaces to Other Subsystems; Assumptions and Constraints; Performance Requirements; and Hardware Requirements. GRA

N86-24227# American Society for Engineering Education, Washington, DC.

DESIGN OF GRAPHIC DISPLAYS IN COMPUTERIZED SYSTEMS Final Report, 1 Sep. 1984 - 1 Sep. 1985

K. BENNETT 1 Sep. 1985 37 p
(Contract N00014-83-D-0689)

(AD-A161890) Avail: NTIS HC A03/MF A01 CSDL 09/2

The user's mental model of a computerized, perceptual database system was investigated in three experiments. The system consisted of a database of multidimensional sounds, command to search the database, and one of three separate displays (two graphic displays for training, an alpha-numeric display for testing). The graphic displays presented different conceptualizations of the database, training with a different graphic display was predicted to cause the formation of a different mental model of the system. The results of three experiments indicated that users trained with one graphic display identified two-dimensional sounds with significantly lower latency (Experiment 1) than users trained with the second graphic display. For three-dimensional sounds these findings with both displays this interaction disappeared (Experiment 3). The results indicate that display design can influence the user's mental model of a system and that this has implications for performance with the system. Author (GRA)

N86-24572# Allied Bendix Corp., Kansas City, MO.

KEEPING TRACK OF ARCHIVED DRAWINGS: A CASE STUDY

B. C. GAULT Oct. 1985 21 p Presented at the Applicon Users Group Fall Technical Meeting, Boston, Mass., 28 Oct. 1985
(Contract DE-AC04-76DP-00613)

(DE86-003129, BDx-613-3386, CONF-8510207-2) Avail: NTIS HC A03/MF A01

The Drafting Systems organization at Allied Corporation, Bendix Kansas City Division (BKC), is responsible for the creation of computer-readable media used for producing photoplots, photostats, and production traveler illustrations. From 1977 when the organization acquired its first Applicon system, until now, there have been over 50,000 different plots produced. Keeping track of what plot is on what archived tape has become a very tedious and time consuming task. This paper describes a software package using Datatrieve and TDMS running on a VAX 11/750 and how it has solved this problem. DOE

APPLICATIONS TO SPECIAL AREAS

N86-26000# Stanford Univ., CA. Dept. of Medicine and Computer Science.

DATABASES FOR STATISTICS

C. WIEDERHOLD *In its Data Base Management* p 1-12 31 Jul. 1985 refs

Avail: NTIS HC A14/MF A02 CSCL 09/2

The current status of areas where statistics use and database technology interact is summarized. The fields of database and statistics are both in an advanced state of development. However, their interaction is still in a primitive stage. Databases specifically designed for managing data which are subject to statistical analysis are discussed. A number of definitions are included in the context of a discussion of basic data base concepts. Some implementation issues are presented and Specific Data Base Management Systems (DBMS) are mentioned. Author

N86-26245# Oak Ridge National Lab., TN.

CARBON DIOXIDE INFORMATION CENTER FY 1985 Progress Report

M. P. FARRELL Nov. 1985 59 p

(Contract DE-AC05-84OR-21400)

(DE86-004654; ORNL/CDIC-11) Avail: NTIS HC A04/MF A01

The Carbon Dioxide Information Center (CDIC) has eight major functions: (1) distribute DOE and CDIC publications; (2) publish a CO₂ document, CDIC communications; (3) respond to information requests; (4) develop a bibliographic information system and provide searching capabilities; (5) identify the CO₂ research community and policymakers and provide access to a computerized world directory; (6) evaluate and test computer codes and package the models; (7) compile and evaluate numeric data bases and package the data; and (8) provide networking facilities among other data centers. CDIC progress during FY 1985 in these functions is discussed. DOE

N86-29295*# Pennsylvania State Univ., University Park. Dept. of Meteorology.

UNIVERSITY PARTICIPATION VIA UNIDATA, PART 1

J. DUTTON *In NASA. Goddard Space Flight Center Proceedings of the Second Pilot Climate Data System Workshop* 7 p 1986

Avail: NTIS HC A12/MF A02 CSCL 04/2

The UNIDATA Project is a cooperative university project, operated by the University Corporation for Atmospheric Research (UCAR) with National Science Foundation (NSF) funding, aimed at providing interactive communication and computations to the university community in the atmospheric and oceanic sciences. The initial focus has been on providing access to data for weather analysis and prediction. However, UNIDATA is in the process of expanding and possibly providing access to the Pilot Climate Data System (PCDS) through the UNIDATA system in an effort to develop prototypes for an Earth science information system. The notion of an Earth science information system evolved from discussions within NASA and several advisory committees in anticipation of receiving data from the many Earth observing instruments on the space station complex (Earth Observing System). Author

N86-29296*# University Corp. for Atmospheric Research, Boulder, CO.

UNIVERSITY PARTICIPATION VIA UNIDATA, PART 2

D. W. FULKER *In NASA. Goddard Space Flight Center Proceedings of the Second Pilot Climate Data System Workshop* 3 p 1986

Avail: NTIS HC A12/MF A02 CSCL 04/2

The University Corporation for Atmospheric Research (UCAR) is presently completing UNIDATA, Phase II, considered to be the design phase of the UNIDATA Project. The four major components of the UNIDATA System are: (1) global services which access is provided, (2) long haul communication for providing that access, (3) local services for providing access and local management of acquired data, and (4) local interactive processing and graphical display. Each component is described in detail with linkages among the components elucidated. Within this framework, access to the PCDS is discussed. It is pointed out that access to the PCDS

could occur via general purpose computer-to-computer communications providing remote log on to the system. The UNIDATA System could also be used to transfer information from the PCDS, provided the appropriate software is available to receive the data. Both of these scenarios require agreements on the access protocols and appropriate physical connections. Universities' needs for weather information on a near real-time basis, and UNIDATA has already established a satellite broadcast data service for this purpose. Author

N86-32063*# California Univ., Santa Barbara.

REMOTE SENSING INFORMATION SCIENCES RESEARCH GROUP, SANTA BARBARA INFORMATION SCIENCES RESEARCH GROUP, YEAR 3 Final Report

J. E. ESTES, T. SMITH, and J. L. STAR 5 Jan. 1986 87 p (Contract NAGW-455)

(NASA-CR-179769; NAS 1.26:179769) Avail: NTIS HC A05/MF A01 CSCL 05/2

Research continues to focus on improving the type, quantity, and quality of information which can be derived from remotely sensed data. The focus is on remote sensing and application for the Earth Observing System (Eos) and Space Station, including associated polar and co-orbiting platforms. The remote sensing research activities are being expanded, integrated, and extended into the areas of global science, georeferenced information systems, machine assisted information extraction from image data, and artificial intelligence. The accomplishments in these areas are examined.

N86-32934# World Climate Programme, Geneva (Switzerland).

GUIDELINES ON THE STRUCTURE, MANAGEMENT, AND OPERATION OF CLIMATE DATA CENTERS

1986 74 p Presented at Inter-Commission Meeting on Climate Data Centre Design and Operations, Atmospheric Environment Service, Downsview, Ontario, 29 Oct. - 2 Nov. 1984

(WCP-99; WMO/TD-48; ETN-86-97250) Avail: NTIS MF A01; HC at WMO, Geneva, Switzerland

World Meteorological Organization climate data center functions and structure are outlined. Data collection and communication; data quality control and processing; data base management and structure; data base services and access; and data security are discussed. ESA

N87-11492# Defense Technical Information Center, Alexandria, VA.

AN ASSESSMENT OF CD ROM (COMPACT DISK READ ONLY MEMORY)

K. J. JACOBSON Jun. 1986 13 p

(AD-A169259; TR-86/15) Avail: NTIS HC A03/MF A01 CSCL 09/2

Compact Disk Read Only Memory (CD ROM) is one of a group of optical disk that offers great information storage potential. CD ROM Technology uses a laser to burn (record) pits in the light sensitive surface of an optical or plastic coated disk. The typical 4.75 inch CD ROM disk offers enough storage capability to hold the contents of 1,200 standard 5.25 inch floppy disks. This report describes the current state-of-the-art and typical steps in preparing the CD ROM database, including data preparation (data indexing and reformatting), disk premastery, disk mastery, and mass replication. The strengths of CD ROM technology include high data storage density, relatively low costs for widely distributed databases, relatively high random access speeds, and disk durability and integration in the normal office environment. Limitations include the current high costs of premastering and mastering disks, and the lack of standardization among CD ROM producers. CD ROM is not an acceptable storage alternative for databases that are highly volatile, however an erasable optical disk is currently under development. GRA

N87-11493# Oak Ridge National Lab., TN.

DOCUMENTATION OF MATERIALS DATA FOR COMPUTER STORAGE AND RETRIEVAL

M. K. BOOKER 1986 38 p
(Contract DE-AC05-84OR-21400)
(DE86-009509; CONF-860722-11) Avail: NTIS HC A03/MF A01

Paradoxically, the biggest problem with computer data management systems is also the biggest advantage - that such systems allow huge amounts of data to be accessed in a convenient fashion. The very mass of data that can be delivered through such systems can result in considerable confusion on the part of the user. A few of the considerations that designers and operators of computerized materials data bases must take into account in order to assure that their data bases are useful and efficient are discussed. In particular, the complex (but vital) problem of documenting and characterizing the data stored in computer data bases in such a fashion as to assure (as far as possible) proper understanding and use of the data by persons accessing the data bases will be examined. B.G.

N87-12388# California Univ., Berkeley. Lawrence Berkeley Lab.

A USER'S GUIDE TO THE SOCIOECONOMIC ENVIRONMENTAL DEMOGRAPHIC INFORMATION SYSTEM (SEEDIS)

F. C. GEY Jan. 1986 130 p
(AD-A168917; IWR-86-UM-1) Avail: NTIS HC A07/MF A01
CSCL 05/3

SEEDIS, the Lawrence Berkeley Laboratory's Socio-Economic Environmental-Demographic Information System, is an integrated information system for retrieving, analyzing, and displaying selected portions of large data bases. These include a wide variety of geographically linked data on the United States' population, economy, agriculture, employment, mortality, air quality, and energy production and use. For Corps of Engineers' planners, SEEDIS is primarily useful for obtaining demographic and socioeconomic data for economic base studies, social profiles and other plan formulation and evaluation tasks. Using SEEDIS Corps analysts can: (1) retrieve over 50,000 pieces of information at county levels of detail and over 1,000 pieces of data for sub-county levels of geography; (2) transform SEEDIS data into formats useable by statistical analysis programs (SPSS and SAS) as well as by popular microcomputer Spreadsheet programs (LOTUS 1-2-3); and (3) download SEEDIS files or transformed files to microcomputer using communications software. This manual guides a new SEEDIS user on a step-by-step tour through the elements of SEEDIS. This journey is illustrated by examples screens, each of which builds upon previous ones. The examples focus on a three county geographic area (the Topeka Kansas SMSA) and on data from the 1947 to 1977 County Data Book and 1980 Census summary tape files. GRA

N87-12404# Wisconsin Univ., Milwaukee. Center for Urban Transportation Studies.

TECHNOLOGY TRANSFER PRIMER Final Report

R. P. SCHMITT, E. A. BEIMBORN, and M. J. MULROY Jul 1985 64 p Sponsored by Federal Highway Administration
(PB86-205341; FHWA/TS-84/225) Avail: NTIS HC A04/MF A01
CSCL 05/1

A general definition and broad overview of the Technology Transfer (T2) Process is provided from a general point of view. The operative elements which need to be included in a successful T2 process are described. Also, included are generic outlines, guidelines and helpful checklists on verbal communication techniques and the preparation of visual aid materials. Table of Contents: The nature of change; The human element; Principles of communication, Basic communication skills, Written communication; Techniques to help us see; Meetings, workshops, and conferences, Technology transfer in actions, and Evaluations GRA

N87-18465# Brookhaven National Lab., Upton, NY Applied Science Dept.

DATA MANAGEMENT OF A MULTILABORATORY FIELD PROGRAM USING DISTRIBUTED PROCESSING

J. L. TICHLER 1986 5 p Presented at the 10th International CODATA Conference, Ottawa, Ontario, 14 Jul. 1986

(Contract DE-AC02-76CH-00016)
(DE86-014770; BNL-38432, CONF-860762-3) Avail: NTIS HC A01/MF A01

The PRECP program is a multilaboratory research effort conducted by the US Department of Energy as a part of the National Acid Precipitation Assessment Program (NAPAP). The primary objective of PRECP is to provide essential information for the quantitative description of chemical wet deposition as a function of air pollution loadings, geographic location, and atmospheric processing. The program is broken into four closely interrelated sectors: Diagnostic Modeling; Field Measurements; Laboratory Measurements; and Climatological Evaluation. Data management tasks are: compile databases of the data collected in field studies; verify the contents of data sets; make data available to program participants either on-line or by means of computer tapes; perform requested analyses, graphical displays, and data aggregations; provide an index of what data is available; and provide documentation for field programs both as part of the computer database and as data reports. DOE

N87-19845# Battelle Pacific Northwest Lab., Sequim, WA.
DEVELOPMENT OF A MICROMETEOROLOGICAL AND TRACER DATA ARCHIVE Final Report

J. G. DROPPO Oct. 1986 25 p
(Contract EPA-68-02-4063)
(PB87-110490; EPA-600/3-86-053) Avail: NTIS HC A03/MF A01
CSCL 04/2

The aim of this effort was to develop and test a means for archiving invaluable data sets in a timely fashion before the necessary supporting information becomes lost for ever. During the course of the project, a series of reports for the user of the archive were prepared. The final project report documents efforts related to the development and implementation of the archive that were not covered in previous reports. The emphasis in this report is on the activities related to creation of data archive sets. Starting with the selection of a computer and software, and ending with the final quality assurance checks on the archived data, information is presented to provide guidance to those wishing to add additional data sets to the micrometeorological and tracer data archive. GRA

N87-23018*# National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.

QUICK-LOOK GUIDE TO THE CRUSTAL DYNAMICS PROJECT'S DATA INFORMATION SYSTEM

CAREY E. NOLL, JEANNE M. BEHNKE, and HENRY G. LINDER Jun. 1987 82 p
(NASA-TM-87818; NAS 1.15:87818) Avail: NTIS HC A05/MF A01 CSCL 08/7

Described are the contents of the Crustal Dynamics Project Data Information System (DIS) and instructions on the use of this facility. The main purpose of the DIS is to store all geodetic data products acquired by the Project in a central data bank and to maintain information about the archive of all Project-related data. Access and use of the DIS menu-driven system is described as well as procedures for contacting DIS staff and submitting data requests. Author

N87-23312# Sci-Tech Knowledge Systems, Scotia, NY.

MATERIALS INFORMATION FOR SCIENCE AND TECHNOLOGY (MIST). PROJECT OVERVIEW: PHASE 1 AND 2 AND GENERAL CONSIDERATIONS

W. GRATTIDGE, J. WESTBROOK, J. MCCARTHY, C. NORTHRUP, JR., and J. RUMBLE, JR. Nov. 1986 128 p Prepared in cooperation with Lawrence Berkeley Lab., Calif., Sandia National Labs., Albuquerque, N. Mex., and the National Bureau of Standards, Washington, D.C.
(DE87-006799; NBS-SP-726) Avail: NTIS HC A07/MF A01

The National Bureau of Standards and the Department of Energy have embarked on a program to build a demonstration computerized materials data system called Materials Information for Science and Technology (MIST). This report documents the first two phases of the project. The emphasis of the first phase

APPLICATIONS TO SPECIAL AREAS

was on determining what information was needed and how it could impact user productivity. The second phase data from the Aerospace Metal Handbook on a set of alloys was digitized and incorporated into the system. DOE

N87-28460# Sandia National Labs., Albuquerque, NM. INFORMATION NETWORK FOR NUMERIC DATABASES OF MATERIALS PROPERTIES

F. C. ALLAN Jun. 1987 14 p Presented at the 78th Annual Conference of the Special Libraries Association, Anaheim, Calif., 6 Jun. 1987

(Contract DE-AC04-76DP-00789)

(DE87-010512; SAND-87-0215C, CONF-8706131-1) Avail NTIS HC A03

This talk traces the development of a network system for materials properties. It shows what our library has done to be involved. But we have benefitted also. First, there is the sense of being involved in a vital and active process, which has possibilities of developing in various ways. Then there is the feeling that we are contributing to that which we will also be using in the future. In addition, involvement has made us aware of what else has been going on world-wide and the increasing cooperation evolving among all participants. Last, there is the satisfaction from the idea that we are contributing uniquely from our status as a special library. DOE

7-30211# Brookhaven National Lab., Upton, NY.

DATA INTEGRATION FOR A SCIENTIFIC FIELD EXPERIMENT
C. M. BENKOVITZ May 1987 10 p Presented at the Piecing the Puzzle Together Conference on Integrating Data for Decisionmaking, Washington, D.C., 27 May 1987

(Contract DE-AC02-76CH-00016)

(DE87-011302; BNL-39865, CONF-8705147-1) Avail: NTIS HC A02/MF A01

The Atmospheric Sciences Division at Brookhaven National Laboratory supports several projects involved in the development and application of data management techniques to compile, analyze and distribute scientific data sets that are the result of various multi-institutional experiments and data gathering projects. This paper will describe the data coordination function needed for one such experiment, the Cross Appalachian Tracer Experiment, which took place in September of 1983. The data needed for experiment planning had to be obtained and analyzed; the data produced during the field period by experiment participants had to be integrated with additional data sets produced outside of CAPTEX so that post experiment analyses could be conducted. Problems presented by the integration of diverse data sets flowing from multiple sources can be divided into problems requiring proper people interfacing and problems that can be solved via the use of computerized techniques. The degree of data integration given each CAPTEX data set was governed by its ultimate use and by the share of total resources available for the task. In this paper the solutions adopted for different data sets for both types of problems will be described. The resulting data sets are available to the scientific community at large. DOE

N88-11564# Lawrence Livermore National Lab., CA. DESIGN AND DEVELOPMENT OF A DATABASE FOR SPECTRAL DATA AND ANALYSIS RESULTS

A. D. DOUGAN, J. E. CARLSON, D. R. MANATT, W. M. BUCKLEY, and R. D. POCHY 15 Apr. 1987 5 p Presented at the Ingres User Association Meeting, San Francisco, Calif., 26 Apr. 1987 Prepared in cooperation with CompuChem, Inc., Hayward, Calif

(Contract W-7405-ENG-48)

(DE87-011323; UCRL-96378; CONF-8704121-2) Avail: NTIS HC A01/MF A01

A data-management system to provide quick access to spectral data and to track chemical parameters and analysis results has been developed. Data are collected at workstations which control stand-alone pulse height analyzers used for gamma, X-ray or alpha counting. The data is electronically transferred to a VAX computer where it is entered into an INGRES database. A set of tools has

been developed to allow users easy access to this database. Intergroup transfer of analyzed results is in the form of transactions, which are modeled after banking transactions. DOE

N88-12086# Naval Postgraduate School, Monterey, CA. OPTICAL LASER TECHNOLOGY, SPECIFICALLY CD-ROM (COMPACT DISC - READ ONLY MEMORY) AND ITS APPLICATION TO THE STORAGE AND RETRIEVAL OF INFORMATION M.S. Thesis

DAVID I. LIND Jun. 1987 132 p

(AD-A184111) Avail: NTIS HC A07/MF A01 CSCI 09/5

One of the significant problems of this information age is the production of vast amounts of information in a form that is neither convenient nor cost effective. A possible solution to this, is the new optical laser technology and its use in the storage and retrieval of large amounts of information. In many areas of DOD, the greatest benefit would be the regained space and weight associated with the distribution of the manuals and other typically paper products on a Compact Disc - Read Only Memory (CD-ROM). One CD-ROM weighs less than an ounce and is capable of storing over 270,000 pages of text. The saved shipping and handling costs alone would be astronomically reduced not to mention the end user who would have a more effective and efficient product. The CD-ROM is designed to work as a peripheral device to a microcomputer and can therefore be made available to any user within an IBM compatible microcomputer. The application/demonstration portion of this thesis took over 2 million database records, from the Transaction Ledger on Disc (TLOD), at the Naval Supply Center (NSC) in Oakland and pressed them to a single CD-ROM. The menu driven retrieval software with indexing on 3 criteria was also provided. GRA

N88-13085 California Univ., Berkeley. SUBJECTIVE PROBABILITY, COMBINATION OF EXPERT OPINION AND PROBABILISTIC APPROACHES TO INFORMATION RETRIEVAL Ph.D. Thesis

PAUL THOMPSON 1986 184 p

Avail: Univ. Microfilms Order No. DA8718181

Probability and its application to the problem of information retrieval were studied. A survey and examination of current work on probabilistic indexing, probabilistic queries, and rules for how these can be combined and used in order to rank output documents by computed values of probability of relevance are presented. In these current approaches to probabilistic information retrieval (PIR), probability is interpreted as a relative frequency or as a person's estimate of a relative frequency. There are three major conceptual difficulties with current theories: independence/dependence of individual term probabilities; the small sample return, and the validity of probabilities used. The psychological literature on human probability assessment was studied. A computerized simulation study examines how errors in estimation of term probabilities propagate into the combined probability for each document and how this affects the ranked output of documents. A mathematical model was developed for PIR which uses a subjective interpretation of probability, probability distributions, and the technique of combination of expert opinions. Dissert. Abstr.

N88-18505# Strategic Air Command, Offutt AFB, NE. AIR FORCE GEOGRAPHIC INFORMATION AND ANALYSIS SYSTEM

D. A. HENNEY, D. S. JANSING, R. C. DURFEE, S. M. MARGLE, and L. E. TILL 1987 11 p Presented at the Geographic Information System Conference, San Francisco, Calif., 27 Oct. 1987 Prepared in cooperation with Civil Engineering Squadron, Sheppard AFB, Tex. and ORNL, Tenn.

(Contract DE-AC05-84OR-21400)

(DE88-001420; CONF-8710173-1) Avail: NTIS HC A03/MF A01

A microcomputer-based geographic information and analysis system (GIAS) was developed to assist Air Force planners with environmental analysis, natural resources management, and facility and land-use planning. The system processes raster image data, topological data structures, and geometric or vector data similar

to that produced by computer-aided design and drafting (CADD) systems, integrating the data where appropriate. Data types included Landsat imagery, scanned images of base maps, digitized point and chain features, topographic elevation data, United States Geological Survey stream course data, highway networks, railroad networks, and land use/land cover information from United States Geological Survey interpreted aerial photography. The system is also being developed to provide an integrated display and analysis capability with base maps and facility data bases prepared on CADD systems DOE

N88-29247# Sandia National Labs., Albuquerque, NM
**COMPARISON OF TYPICAL METEOROLOGICAL YEAR
 SOLAR RADIATION INFORMATION WITH THE SOLMET DATA
 BASE**

D. F. MENICUCCI and J. P. FERNANDEZ Feb 1988 406 p
 (Contract DE-AC04-76DP-00789)
 (DE88-009242, SAND-87-2379) Avail NTIS HC A18

Over the years the misapplication of TMY and SOLMET data has become increasingly prevalent and, in some cases, has led to improperly sized solar energy systems or incorrect conclusions from research efforts. Much of the misapplication stems from misunderstanding and confusion about the origin, design and originally intended uses of these data. This report outlines the historical development of the SOLMET and TMY data bases and discusses the various appropriate applications for them. A majority of the report is devoted to the presentation of summary solar radiation information about the SOLMET data base and associated TMY data. Solar resource summary statistics are computed for direct normal, total normal, and fixed tilt collectors at thirty-eight sites. For each site, statistical information is presented in graphical and tabular form and can be used to compare the representative TMY year to each SOLMET year. This report is specifically intended for individuals who use TMY and/or SOLMET solar radiation data in some aspect of solar system design, analysis, or operation and want information about the potential yearly variation of the solar resource in various locations throughout the United States. DOE

N89-10500# Air Force Geophysics Lab, Hanscom AFB, MA.
**THE REMOTE ATMOSPHERIC PROBING INFORMATION
 DISPLAY (RAPID) SYSTEM Final Report, Sep. 1986 - Sep.
 1987**

P. A. SADOSKI, D. EGERTON, F. I. HARRIS (ST Systems Corp., Lexington, Mass.), and A. R. BOHNE 15 Jan 1988 26 p
 (Contract AF PROJ 6670)
 (AD-A196314, AFGL-TR-88-0036, AFGL-ER-97) Avail NTIS
 HC A03/MF A01 CSCL 04/2

The RAPID system has been developed to support short term forecasting of cloud and precipitation. RAPID was developed with the philosophy that the system should be easily maintained, user-friendly, yet powerful enough to perform both the analysis of radar and satellite data and generation of forecasts in real-time. The two major hardware components are a VAX host computer and an ADAGE RDS-3000 image processor. The RAPID user environment is structured to encourage user participation. Numerous standardization procedures are employed: a functional disk organization, standardized data and source file headers, extensive file documentation, and use of user developed RAPID tools, and libraries of often used routines. Data management has been designed to maximize the potential for real time capability. Radar and satellite data are preprocessed on other computers before ingestion into RAPID. The bulk of these data and derived products are stored, and analysis and display are performed entirely within the image processor. GRA

I-11615# Stanford Linear Accelerator Center, CA
**INTEGRATED DATABASE APPROACH FOR GEODETIC
 APPLICATIONS**

ROBERT RULAND and DETLEV RULAND (Wuerzburg Univ., West Germany) Nov. 1987 20 p Presented at the 4th International Working Conference on Statistical and Scientific Database Management, Rome, Italy, 21 Jun 1988

(Contract DE-AC03-76SF-00515)

(DE88-012726, SU-SLAC-PUB-4474, CONF-8806166-2) Avail
 NTIS HC A03/MF A01

Geodetic measurements even of a defined project produce a vast amount of heterogeneous data. The analysis of these data used to be time-and-manpower consuming and only focused on subsets of the data. This paper demonstrates how an integrated database system will provide an immediate standardized and easy access to the entire information support data management, and, consequently, streamline the analysis. DOE

N89-12554*# National Aeronautics and Space Administration,
 Ames Research Center, Moffett Field, CA.
**DEVELOPMENT AND VALIDATION OF AN ADVANCED
 LOW-ORDER PANEL METHOD**

DALE L. ASHBY, STEVEN K. IGUCHI (Sterling Federal Systems, Inc., Palo Alto, Calif.), and MICHAEL DUDLEY Oct 1988 48 p
 (NASA-TM-101024, A-88275, NAS 115:101024) Avail NTIS HC
 A03/MF A01 CSCL 01/1

A low-order potential-flow panel code, PMARC, for modeling complex three-dimensional geometries, is currently being developed at NASA Ames Research Center. The PMARC code was derived from a code named VSAERO that was developed for Ames Research Center by Analytical Methods, Inc. In addition to modeling potential flow over three-dimensional geometries, the present version of PMARC includes several advanced features such as an internal flow model, a simple jet wake model, and a time-stepping wake model. Data management within the code was optimized by the use of adjustable size arrays for rapidly changing the size capability of the code, reorganization of the output file and adopting a new plot file format. Preliminary versions of a geometry preprocessor and a geometry/aerodynamic data postprocessor are also available for use with PMARC. Several test cases are discussed to highlight the capabilities of the internal flow model, the jet wake model, and the time-stepping wake model. Author

N89-12558# Federal Aviation Administration, Atlantic City, NJ
 Technical Center.

**LORAN C OFFSHORE FLIGHT FOLLOWING (LOFF) IN THE
 GULF OF MEXICO**

FRANK LORGE Feb. 1988 68 p
 (AD-A197179, DOT/FAA/CT-TN88/8) Avail NTIS HC A04/MF
 A01 CSCL 17/7

This report describes results of tests conducted by the FAA Technical Center to evaluate the LOFF system. Simulation and flight test were used to measure system performance under operational conditions. The LOFF system is the first implementation of Automatic Dependent Surveillance (ADS) by the FAA to track aircraft. It uses aircraft derived position as determined by Loran, transmitted by VHF data link for use by air traffic controllers. A converter unit was installed in the Houston Air Route Traffic Control Center (ARTCC) to process incoming LOFF messages and convert them into a radar data format. Results of this conversion are input to the Enhanced Direct Access Radar Channel (EDARC) which presents the aircraft as a conventional radar target. The system provides coverage in areas not currently served by radar, offshore in the Gulf of Mexico. Simulated inputs were used during testing to determine accuracy of the LOFF converter, to measure timing delays, and to relate aircraft position in latitude/longitude to a displayed position as seen by the controller. Flight tests were conducted to determine VHF coverage using the system, to measure Loran accuracy in the area, to compare dynamic performance with nondynamic performance of the EDARC system, and to provide an overall evaluation of the operational system. Overall results of the LOFF test program were favorable. The system performs in a predictable and reasonable manner and is comparable to that of radar. GRA

N89-12581*# Martin Marietta Aerospace, Denver, CO. Space
 Station Program

**SPACE STATION INTEGRATED PROPULSION AND FLUID
 SYSTEMS STUDY**

L. ROSE, D. BERGMAN, B. BICKNELL, and S. WILSON 25

APPLICATIONS TO SPECIAL AREAS

Aug. 1987 77 p
(Contract NAS8-36438)
(NASA-CR 179393, NAS 1.26.179393, MCR-87-580) Avail NTIS
HC A05/MF A01 CSCL 22/2

This Databook addresses the integration of fluid systems of the Space Station program. It includes a catalog of components required for the Space Station elements fluid systems and information on potential hardware commonality. The components catalog is in four parts. The first part lists the components defined for all the fluid systems identified in EP 2.1, Space Station Program Fluid Systems Configuration Databook. The components are cross-referenced in three sections. Section 2.1 lists the components by the fluid system in which they are used. Section 2.2 lists the components by type. Section 2.3 lists by the type of fluid media handled by the component. The next part of the catalog provides a description of the individual component. This section (2.4) is made up of data retrieved from Martin Manetta Denver Aerospace component data base. The third part is an assessment of propulsion hardware technology requirements. Section 2.5 lists components identified during the study as requiring development prior to flight qualification. Finally, Section 2.6 presents the results of the evaluation of commonality between components. The specific requirements of each component have been reviewed and duplication eliminated. Author

N89-13305# California Univ., Berkeley Dept of Computer Sciences.

MULTIPLE REPRESENTATION DOCUMENT DEVELOPMENT

Technical Report, 7 Aug. 1984 - 6 Aug. 1987

PEHONG CHEN and MICHAEL A. HARRISON 6 Aug. 1987
38 p
(Contract NG0039-84-C-0089, ARPA ORDER 4871)
(AD-A197369, UCB/CSD-87/367) Avail. NTIS HC A03/MF A01
CSCL 12/5

The world of electronic publishing software seems to divide into two camps the conventional batch-oriented programming language approach versus the more elaborate direct manipulation paradigm. This paper indicates which aspects of document preparation are more conveniently handled under which model and points out several instances of a hybrid approach which takes advantage of multiple representations. The authors introduce a framework for analyzing the structure of multiple representation systems in general. Based upon this simple but robust framework, a top-down design methodology is derived. The design of a fairly sophisticated document development environment is discussed as a case study of the methodology. GRA

N89-14472*# Lockheed Missiles and Space Co., Palo Alto, CA Research and Development Div.

THE COMPUTATIONAL STRUCTURAL MECHANICS TESTBED ARCHITECTURE. VOLUME 1: THE LANGUAGE

CARLOS A. FELIPPA Dec. 1988 95 p

(Contract NAS1-18444)

(NASA-CR-178384, NAS 1.26.178384, LMSC/D878511-VOL-1)

Avail. NTIS HC A05/MF A01 CSCL 20/11

This is the first set of five volumes which describe the software architecture for the Computational Structural Mechanics Testbed. Derived from NICE, an integrated software system developed at Lockheed Palo Alto Research Laboratory, the architecture is composed of the command language CLAMP, the command language interpreter CLIP, and the data manager GAL. Volumes 1, 2, and 3 (NASA CR's 178384, 178385, and 178386, respectively) describe CLAMP and CLIP, and the CLIP-processor interface. Volumes 4 and 5 (NASA CR's 178387 and 178388, respectively) describe GAL and its low-level I/O. CLAMP, an acronym for Command Language for Applied Mechanics Processors, is designed to control the flow of execution of processors written for NICE. Volume 1 presents the basic elements of the CLAMP language and is intended for all users. Author

N89-15435*# Lockheed Missiles and Space Co., Palo Alto, CA. Research and Development Div.

THE COMPUTATIONAL STRUCTURAL MECHANICS TESTBED ARCHITECTURE. VOLUME 2: THE INTERFACE

CARLOS A. FELIPPA Dec. 1988 212 p

(Contract NAS1-18444)

(NASA-CR-178386, NAS 1.26.178386, LMSC/D878511-VOL-2)

Avail. NTIS HC A10/MF A02 CSCL 20/11

This is the third set of five volumes which describe the software architecture for the Computational Structural Mechanics Testbed. Derived from NICE, an integrated software system developed at Lockheed Palo Alto Research Laboratory, the architecture is composed of the command language CLAMP, the command language interpreter CLIP, and the data manager GAL. Volumes 1, 2, and 3 (NASA CR's 178384, 178385, and 178386, respectively) describe CLAMP and CLIP and the CLIP-processor interface. Volumes 4 and 5 (NASA CR's 178387 and 178388, respectively) describe GAL and its low-level I/O. CLAMP, an acronym for Command Language for Applied Mechanics Processors, is designed to control the flow of execution of processors written for NICE. Volume 3 describes the CLIP-Processor interface and related topics. It is intended only for processor developers. Author

N89-16018# IIT Research Inst., Bartlesville, OK.

THERMODYNAMICS OF MATERIALS IN THE RANGE C10-C16 DATA BASE REFERENCE MANUAL

M. M. STRUBE, D. G. ARCHER, R. D. CHIRICO, and W. V. STEELE Oct. 1988 27 p Prepared for Naval Air Propulsion Center, Trenton, NJ, and Air Force Wright Aeronautical Lab, Wright Patterson AFB, Ohio

(Contract DE-FC22-83FE-60149)

(DEFC-001244; NIPER-334) Avail. NTIS HC A03/MF A01

This document is intended to serve as a users guide for the Thermodynamic Properties and Thermodynamic Functions Data Base programs. Installation instructions are given for both data base programs. An overview of the data base structures and contents is then provided. A brief section outlining the special usage of the computer keyboard when accessing the data bases is also given. A guided tour through the data bases is provided with figures illustrating the various information screens and data files seen by the user at each stage. DOE

N89-16195*# Lockheed Missiles and Space Co., Palo Alto, CA. Research and Development Div.

THE COMPUTATIONAL STRUCTURAL MECHANICS TESTBED ARCHITECTURE. VOLUME 4: THE GLOBAL-DATABASE MANAGER GAL-DBM

MARY A. WRIGHT, MARC E. REGELBRUGGE, and CARLOS A. FELIPPA (Colorado Univ., Boulder.) Jan 1989 208 p

(Contract NAS1-18444)

(NASA-CR-178387, NAS 1.26.178387, LMSC/D878511-VOL-4)

Avail. NTIS HC A10/MF A02 CSCL 20/11

This is the fourth of a set of five volumes which describe the software architecture for the Computational Structural Mechanics Testbed. Derived from NICE, an integrated software system developed at Lockheed Palo Alto Research Laboratory, the architecture is composed of the command language CLAMP, the command language interpreter CLIP, and the data manager GAL. Volumes 1, 2, and 3 (NASA CR's 178384, 178385, and 178386, respectively) describe CLAMP and CLIP and the CLIP-processor interface. Volumes 4 and 5 (NASA CR's 178387 and 178388, respectively) describe GAL and its low-level I/O. CLAMP, an acronym for Command Language for Applied Mechanics Processors, is designed to control the flow of execution of processors written for NICE. Volume 4 describes the nominal-record data management component of the NICE software. It is intended for all users. Author

N89-16366*# Lockheed Missiles and Space Co., Burbank, CA.
THE TAVERNS EMULATOR: AN ADA SIMULATION OF THE SPACE STATION DATA COMMUNICATIONS NETWORK AND SOFTWARE DEVELOPMENT ENVIRONMENT

NORMAN R. HOWES *In* NASA, Lyndon B. Johnson Space Center, First International Conference on Ada (R) Programming Language Applications for the NASA Space Station, Volume 2 10 p 1986
 Avail: NTIS HC A22/MF A03 CSCL 09/2

The Space Station DMS (Data Management System) is the onboard component of the Space Station Information System (SSIS) that includes the computers, networks and software that support the various core and payload subsystems of the Space Station. TAVERNS (Test And Validation Environment for Remote Networked Systems) is a distributed approach for development and validation of application software for Space Station. The TAVERNS concept assumes that the different subsystems will be developed by different contractors who may be geographically separated. The TAVERNS Emulator is an Ada simulation of a TAVERNS on the ASD VAX. The software services described in the DMS Test Bed User's Manual are being emulated on the VAX together with simulations of some of the core subsystems and a simulation of the DCN. The TAVERNS Emulator will be accessible remotely from any VAX that can communicate with the ASD VAX. Author

N89-16371*# Computer Corp. of America, Cambridge, MA.
A DATABASE MANAGEMENT CAPABILITY FOR ADA
 ARVOLA CHAN, SY DANBERG, STEPHEN FOX, TERRY LANDERS, ANIL NORI, and JOHN M. SMITH *In* NASA, Lyndon B. Johnson Space Center, First International Conference on Ada (R) Programming Language Applications for the NASA Space Station, Volume 2 20 p 1986
 Avail: NTIS HC A22/MF A03 CSCL 09/2

The data requirements of mission critical defense systems have been increasing dramatically. Command and control, intelligence, logistics, and even weapons systems are being required to integrate, process, and share ever increasing volumes of information. To meet this need, systems are now being specified that incorporate data base management subsystems for handling storage and retrieval of information. It is expected that a large number of the next generation of mission critical systems will contain embedded data base management systems. Since the use of Ada has been mandated for most of these systems, it is important to address the issues of providing data base management capabilities that can be closely coupled with Ada. A comprehensive distributed data base management project has been investigated. The key deliverables of this project are three closely related prototype systems implemented in Ada. These three systems are discussed. Author

N89-16375*# McDonnell-Douglas Astronautics Co., Houston, TX.
SPACE STATION ADA RUNTIME SUPPORT FOR NESTED ATOMIC TRANSACTIONS Abstract Only
 EDWARD J. MONTEIRO *In* NASA, Lyndon B. Johnson Space Center, First International Conference on Ada (R) Programming Language Applications for the NASA Space Station, Volume 2 1 p 1986
 Avail: NTIS HC A22/MF A03 CSCL 09/2

The Space Station Data Management System (DMS), associated computing subsystems, and applications have varying degrees of reliability associated with their operation. A model has been developed (McKay '86) which allows the DMS runtime environment to appear as an Ada virtual machine to applications executing within it. This model is modular, flexible, and dynamically configurable to allow for evolution and growth over time. Support for Fault-tolerant computing is included within this model. The basic primitive involved in this support is based on atomic actions (Grey '78). An atomic action possesses two fundamental properties (1) it is indivisible with respect to concurrent actions, and (2) it is indivisible with respect to failure. A transaction is a collection of atomic actions which collectively appear to be one action. Transactions may be nested, providing even more powerful support for reliability. A proposed approach is described for providing support for nested atomic transactions within the Ada runtime model developed for the Space Station environment. The level of

support is modular, flexible and dynamically configurable just like the overall runtime support environment. Author

N89-16486# Oak Ridge National Lab., TN.
ATF (ADVANCED TOROIDAL FACILITY) DATA MANAGEMENT
 K. L. KANNAN and L. R. BAYLOR 1988 11 p Presented at the 7th Topical Conference on High Temperature Plasma Diagnostics, Napa, CA, 13 Mar. 1988
 (Contract DE-AC05-84OR-21400)
 (DE89-007872; CONF-880364-36) Avail: NTIS HC A03/MF A01

Data management for the Advanced Toroidal Facility (ATF), a stellarator located at Oak Ridge National Laboratory (ORNL), is provided by DMG, a locally developed, VAX-based software system. DMG is a data storage and retrieval software system that provides the user interface to ATF raw and analyzed data. Data are described in terms of data models and data types and are organized as signals into files, which are internally documented. The system was designed with user accessibility, software maintainability, and extensibility as primary goals. Extensibility features include compatibility with ATF as it moves from pulsed to steady-state operation and capability for use of the DMG system with experiments other than ATF. DMG is implemented as a run-time library of routines available as a shareable image. General-purpose and specialized data acquisition and analysis applications have been developed using the DMG system. This paper describes the DMG system and the interfaces to it. DOE

N89-18749# Florida International Univ., Miami.
TECHNOLOGY TRANSFER FOR DEVELOPMENT OF COASTAL ZONE RESOURCES: CARIBBEAN EXPERTS EXAMINE CRITICAL ISSUES

C. SPECTER and D. GAYLE *In* ESA, Proceedings of the 1988 International Geoscience and Remote Sensing Symposium (IGARSS) '88 on Remote Sensing: Moving Towards the 21st Century, Volume 3 p 1449-1452 Aug. 1988
 Copyright Avail: NTIS HC A99/MF A01; ESA Publications Division, ESTEC, Noordwijk, Netherlands, \$120 US or 250 Dutch guilders

Remote sensing utilization by developing countries for the exploration, development, and conservation of their marine/coastal zone resources is discussed. This technology is not being applied to development activities to the extent that it could be. Technological factors, as well as other significant factors in the transfer process, such as political and economic constraints, that hinder the flow of technology to the Caribbean area are assessed. Recommendations that may be useful to policy-makers and managers concerned with this technology transfer problem are considered. ESA

N89-21559# Naval Ocean Systems Center, San Diego, CA.
GRAPS (GRAPHICAL PLOTTING SYSTEM) USER'S GUIDE. A GRAPHICAL PLOTTING SYSTEM FOR DISPLAYING SCIENTIFIC AND ENGINEERING DATA Final Report, Sep. 1987 - Sep. 1988
 JAMES C. LOGAN and JOHN STRAUCH Oct. 1988 31 p
 (AD-A202583, NOSC/TD-1326) Avail: NTIS HC A03/MF A01 CSCL 12/5

This document provides an introduction and update to the Graphical Plotting System (GRAPS), a plotting utility developed by the Naval Ocean Systems Center for the personal computer. GRAPS provides a convenient, user-friendly tool for the display of engineering and scientific data in a number of conventional plot formats. Linear, semi log, polar, log-log, Smith, and contour plot formats are among those that can be selected. User-friendly features include auto and user-defined scaling, text editing on graphics screens, and data file management options. Auto and user-defined scaling are new GRAPS features. The polar plots have been significantly improved and the contour plot added. The data file management options have also been expanded. GRAPS will plot any data stored in ASCII files in the GRAPS format. GRAPS is intended to be used as a stand-alone utility for the preparation and display of engineering and scientific data. It is not suitable for inclusion as part of another program, although subroutines could be stripped out for inclusion in other programs.

APPLICATIONS TO SPECIAL AREAS

GRAPS is set up to read data from a disk file written (in ASCII) to a simple format. The disk file may be created by using an editor or word processor. Preferably, a subroutine may be included in the applications program to write the raw data directly to a disk file in the GRAPS format. GRA

N89-21730* Tennessee Univ., Chattanooga Center of Excellence for Computer Applications.

SIRE: A SIMPLE INTERACTIVE RULE EDITOR FOR NICBES

ALEX BYKAT In Alabama Univ., Research Reports: 1988 NASA/ASEE Summer Faculty Fellowship Program 22 p Dec. 1988

Avail NTIS HC A99/MF E03 CSCL 09/1

To support evolution of domain expertise, and its representation in an expert system knowledge base, a user-friendly rule base editor is mandatory. The Nickel Cadmium Battery Expert System (NICBES), a prototype of an expert system for the Hubble Space Telescope power storage management system, does not provide such an editor. In the following, a description of a Simple Interactive Rule Base Editor (SIRE) for NICBES is described. The SIRE provides a consistent internal representation of the NICBES knowledge base. It supports knowledge presentation and provides a user-friendly and code language independent medium for rule addition and modification. The SIRE is integrated with NICBES via an interface module. This module provides translation of the internal representation to Prolog-type rules (Horn clauses), latter rule assertion, and a simple mechanism for rule selection for its Prolog inference engine. Author

N89-22133* Lockheed Missiles and Space Co., Palo Alto, CA. **THE COMPUTATIONAL STRUCTURAL MECHANICS TESTBED ARCHITECTURE. VOLUME 2: DIRECTIVES**

CARLOS A. FELIPPA Feb. 1989 364 p

(Contract NAS1-18444)

(NASA-CR-178385, NAS 1.26-178385, LMSC/D878511) Avail.

NTIS HC A16/MF A02 CSCL 20/11

This is the second of a set of five volumes which describe the software architecture for the Computational Structural Mechanics Testbed Derived from NICE, an integrated software system developed at Lockheed Palo Alto Research Laboratory, the architecture is composed of the command language (CLAMP), the command language interpreter (CLIP), and the data manager (GAL). Volumes 1, 2, and 3 (NASA CR's 178384, 178385, and 178386, respectively) describe CLAMP and CLIP and the CLIP-processor interface. Volumes 4 and 5 (NASA CR's 178387 and 178388, respectively) describe GAL and its low-level I/O. CLAMP, an acronym for Command Language for Applied Mechanics Processors, is designed to control the flow of execution of processors written for NICE. Volume 2 describes the CLIP directives in detail. It is intended for intermediate and advanced users. Author

N89-22188* Environmental Protection Agency, Research Triangle Park, NC Atmospheric Sciences Research Lab

METEOROLOGICAL PROCESSOR FOR REGULATORY MODELS (MPRM-1.1) USER'S GUIDE

JOHN S. IRWIN, JAMES O. PAUMIER, and ROGER W. BRODE (Office of Air Quality Planning and Standards, Research Triangle Park, NC) Jul. 1988 225 p

(PB89-127526, EPA/600/3-88/043) Avail NTIS HC A10/MF

A02 CSCL 13/2

Version 1.1 of Meteorological Processor for Regulatory Models (MPRM) provides a general purpose computer processor for organizing available meteorological data into a format suitable for use by air quality dispersion models. Specifically, the processor is designed to accommodate those dispersion models that have gained EPA approval for use in regulatory decision making. MPRM can be envisioned as a three-stage system. The first stage retrieves the meteorological data from computer tape or disk files and processes the data through various quality assessment checks. The second stage collects all data available for a 24-hour period (upper air observations, hourly surface weather observations, and data collected as part of an on-site meteorological measurement

program) and stores these data in a combined (merged) format. The third stage reads the merged meteorological data and performs the necessary processing to produce a meteorological data file suitable for use by the specified dispersion model. GRA

N89-22295* Pacific Northwest Lab., Richland, WA.

HANFORD METEOROLOGICAL STATION COMPUTER CODES. VOLUME 9: THE QUALITY ASSURANCE COMPUTER CODES

K. W. BURK and G. L. ANDREWS Feb. 1989 171 p

(Contract DE-AC06-76RL-01830)

(DE89-008414; PNL-6279-VOL-9) Avail: NTIS HC A08/MF A01

The Hanford Meteorological Station (HMS) was established in 1944 on the Hanford Site to collect and archive meteorological data and provide weather forecasts and related services for Hanford Site approximately 1/2 mile east of the 200 West Area and is operated by PNL for the U.S. Department of Energy. Meteorological data are collected from various sensors and equipment located on and off the Hanford Site. These data are stored in data bases on the Digital Equipment Corporation (DEC) VAX 11/750 at the HMS (hereafter referred to as the HMS computer). Files in those data bases are routinely transferred to the Emergency Management System (EMS) computer at the Unified Dose Assessment Center (UDAC). To ensure the quality and integrity of the HMS data, a set of Quality Assurance (QA) computer codes has been written. The codes will be routinely used by the HMS system manager or the data base custodian. The QA codes provide detailed output files that will be used in correcting erroneous data. The following sections in this volume describe the implementation and operation of QA computer codes. The appendices contain detailed descriptions, flow charts, and source code listings of each computer code. DOE

N89-22332* National Aeronautics and Space Administration, Goddard Space Flight Center, Greenbelt, MD.

PROCEEDINGS OF THE SCIENTIFIC DATA COMPRESSION WORKSHOP

H. K. RAMAPRIYAN, ed. Washington, DC Feb. 1989 448 p Workshop held in Snowbird, UT, 3-5 May 1988, sponsored by NASA, Washington

(NASA-CP-3025, REPT-89B0038, NAS 1.55.3025) Avail NTIS

HC A19/MF A03 CSCL 09/2

Continuing advances in space and Earth science requires increasing amounts of data to be gathered from spaceborne sensors. NASA expects to launch sensors during the next two decades which will be capable of producing an aggregate of 1500 Megabits per second if operated simultaneously. Such high data rates cause stresses in all aspects of end-to-end data systems. Technologies and techniques are needed to relieve such stresses. Potential solutions to the massive data rate problems are, data editing, greater transmission bandwidths, higher density and faster media, and data compression. Through four subpanels on Science Payload Operations, Multispectral Imaging, Microwave Remote Sensing and Science Data Management, recommendations were made for research in data compression and scientific data applications to space platforms.

N89-22374* Argonne National Lab., IL Mathematics and Computer Science Div.

A PROJECT FOR DEVELOPING A LINEAR ALGEBRA LIBRARY FOR HIGH-PERFORMANCE COMPUTERS

J. DEMMEL, J. DONGARRA, J. DUCROZ, A. GREENBAUM, S. HAMMARLING, and D. SORENSEN 1988 5 p Presented at the Symposium on the Solution of Super Large Problems in Computational Mechanics, Mystic, CT, 18 Oct. 1988

(Contract W-31-109-ENG-38)

(DE89-007501, CONF-8810262-2) Avail NTIS HC A01/MF A01

Argonne National Laboratory, the Courant Institute for Mathematical Sciences, and the Numerical Algorithms Group, Ltd., are developing a transportable linear algebra library in FORTRAN 77. The library is intended to provide a uniform set of subroutines to solve the most common linear algebra problems and to run efficiently on a wide range of high-performance computers. To be effective, the new library must satisfy several criteria. First, it must

be highly efficient, or at least tunable to high efficiency, on each machine. Second, the user interface must be uniform across machines. Otherwise much of the convenience of portability will be lost. Third, the program must be widely available. NETLIB has demonstrated how useful and important it is for these codes to be available easily, and preferably on line. We intend to distribute the new library in a similar way, for no cost or a nominal cost only. In addition, the programs must be well documented. DOE

N89-23199# Sandia National Labs., Albuquerque, NM. Advanced Systems Development Dept.
ENGINEERING GRAPHICS SYSTEM (EGS) USER'S MANUAL
 DAVID E. SALGUERO 31 Jan. 1989 395 p
 (Contract DE-AC04-76DP-00789)
 (DE89-009668, SAND-89-0156) Avail NTIS HC A17/MF A03

The Engineering Graphics System (EGS) is a computer program for use on Digital Equipment Corporation VAXstation color workstations. Its purpose is to manage and plot sets of engineering analysis data for use in reports and presentations. It is capable of producing nearly any type of x-y plot from a set of tabulated data. After the plot curves have been retrieved from the tabulated data, EGS can be used to interactively modify the appearance of the plot for use in a report or presentation. Modifications appear on the workstation display exactly as they appear on final hardcopy, which avoids costly iterations. Hardcopy plots can be made on two different black and white laser printers and on two different color printers, and plots can be converted for use by the Interleaf technical publishing software. GRA

N89-2406# Air Force Inst. of Tech., Wright-Patterson AFB, OH. School of Engineering
A DATABASE MANAGEMENT SYSTEM FOR COMPUTER-AIDED DIGITAL CIRCUIT DESIGN M.S. Thesis
 SUE A. EHRHART Dec 1988 101 p
 (AD-A206047; AFIT/GCS/ENG/88D-4) Avail NTIS HC A06/MF A01 CSCL 20/3

This thesis effort documents the design and implementation of a relational database and associated database management system (DBMS) for the AFIT digital circuit design environment, a graphics oriented tool that allows circuits to be designed at a uniform, chip-level of detail, checked for proper connections, and simulated. The approach to this effort included a survey of existing methods of Computer-Aided Design (CAD) data management, analysis of the data and data manipulation requirements of the design environment, design of a data manipulation language, and implementation of a DBMS to carry out the manipulations. GRA

N89-25162*# Georgia Inst. of Tech., Atlanta
TRUSS: AN INTELLIGENT DESIGN SYSTEM FOR AIRCRAFT WINGS
 PRESTON R. BATES and DANIEL P. SCHRAGE In NASA. Langley Research Center, Recent Advances in Multidisciplinary Analysis and Optimization, Part 1 p 333-355 Apr 1989
 Avail: NTIS HC A23/MF A03 CSCL 09/2

Competitive leadership in the international marketplace, superiority in national defense, excellence in productivity, and safety of both private and public systems are all national defense goals which are dependent on superior engineering design. In recent years, it has become more evident that early design decisions are critical, and when only based on performance often result in products which are too expensive, hard to manufacture, or unsupportable. Better use of computer-aided design tools and information-based technologies is required to produce better quality United States products. A program is outlined here to explore the use of knowledge based expert systems coupled with numerical optimization, database management techniques, and designer interface methods in a networked design environment to improve and assess design changes due to changing emphasis or requirements. The initial structural design of a tiltrotor aircraft wing is used as a representative example to demonstrate the approach being followed. Author

N89-26601*# National Aeronautics and Space Administration
 Goddard Space Flight Center, Greenbelt, MD
AN INTELLIGENT USER INTERFACE FOR BROWSING SATELLITE DATA CATALOGS
 ROBERT F. CROMP and SHARON CROOK In: The 1989 Goddard Conference on Space Applications of Artificial Intelligence p 281-299 Apr 1989
 Avail: NTIS HC A17/MF A03 CSCL 09/2

A large scale domain-independent spatial data management expert system that serves as a front-end to databases containing spatial data is described. This system is unique for two reasons. First, it uses spatial search techniques to generate a list of all the primary keys that fall within a user's spatial constraints prior to invoking the database management system, thus substantially decreasing the amount of time required to answer a user's query. Second, a domain-independent query expert system uses a domain-specific rule base to preprocess the user's English query, effectively mapping a broad class of queries into a smaller subset that can be handled by a commercial natural language processing system. The methods used by the spatial search module and the query expert system are explained, and the system architecture for the spatial data management expert system is described. The system is applied to data from the International Ultraviolet Explorer (IUE) satellite, and results are given. Author

N89-27593# Sandia National Labs., Albuquerque, NM
 Geo-Science Analysis Div.
DEVELOPING A GEOLOGIC AND ENGINEERING PROPERTIES DATA BASE WITH INGRES
 MARGARET L. KREBS-JESPERSEN 1989 26 p Presented at the INGRES User Association Meeting, New Orleans, LA, 23 Apr. 1989
 (Contract DE-AC04-76DP-00789)
 (DE89-013520, SAND-89-0838C, CONF-8904194-3) Avail NTIS HC A03/MF A01

The design of a data base for storing diverse geological and site engineering properties data from various sources using the INGRES data base management system has required: (1) designing tables for data that are similar but have very different test conditions to be reported; (2) determining what data is necessary to ensure that all records are unique; (3) changing, as necessary, the design of data base tables to accommodate the needs of new data submittals; (4) defining limits to comments and descriptions of test conditions to be stored in the data base; (5) solving problems caused by the limitations of the available field types in INGRES; and (6) designing a tracking system for data submissions to satisfy Project quality assurance requirements. The resulting relational data base design is simple, flexible, and capable of accommodating changes in requirements for data storage and user needs. The INGRES Report Writer utility has proven to be a powerful tool for generating reports because the Report Writer code is easily revised as table structure changes. Separate data storage tables can be joined for report production, and output can be customized for each user. DOE

N89-28121*# National Aeronautics and Space Administration
 Goddard Space Flight Center, Greenbelt, MD
BANGLADESH AGRO-CLIMATIC ENVIRONMENTAL MONITORING PROJECT Abstract Only
 C. VERMILLION, H. MAURER, M. WILLIAMS, J. KAMOWSKI, T. MOORE, W. MAKSIMOVICH, H. OBLER, and E. GILBERT In: The Laboratory for Oceans p 25-26 1988
 Avail: NTIS HC A12/MF A02 CSCL 09/2

The Agro-Climatic Environmental Monitoring Project (ACEMP) is based on a Participating Agency Service Agreement (PASA) between the Agency for International Development (AID) and the National Oceanic and Atmospheric Administration (NOAA). In FY80, the Asia Bureau and Office of Federal Disaster Assistance (OFDA), worked closely to develop a funding mechanism which would meet Bangladesh's needs both for flood and cyclone warning capability and for application of remote sensing data to development problems. In FY90, OFDA provided for a High Resolution Picture Transmission (HRPT) receiving capability to improve their

APPLICATIONS TO SPECIAL AREAS

forecasting accuracy for cyclones, flooding and storm surges. That equipment is primarily intended as a disaster prediction and preparedness measure. The ACEM Project was designed to focus on the development applications of remote sensing technology. Through this Project, AID provided to the Bangladesh Government (BDG) the equipment, technical assistance, and training necessary to collect and employ remote sensing data made available by satellites as well as hydrological data obtained from data collection platforms placed in major rivers. The data collected will enable the BDG to improve the management of its natural resources.

Author

N89-28447# Lawrence Livermore National Lab., CA. **PROBLEMS AND SOLUTIONS IN ONLINE DOCUMENTATION SYSTEMS**

JEAN SHULER Jun. 1989 6 p Presented at the Cray User's Group Conference, Los Angeles, CA, 24 Apr. 1989 (Contract W-7405-ENG-48) (DE89-014092; UCRL-101237, CONF-8904210-7) Avail. NTIS HC A02/MF A01

Pogo says we are surrounded by insurmountable opportunities. DOCUMENT, the online document system at NMFECC, has been continually enhanced and modified in the past 12 years to meet customer needs by analyzing the insurmountable opportunities (commonly called problems) that have arisen. We have analyzed where these documentation retrieval problems exist and solved these problems. The greatest challenge was to provide the customer with a stable system using the existing database of documents while adding new features and programs to retrieve information. Listed are four of the problems we have encountered, solutions are given and some indicators of success are shown.

DOE

N84-74361 RAND Corp., Santa Monica, CA. **INFORMATION TRANSFER IN SOVIET SCIENCE AND ENGINEERING**

B. PARROTT Nov. 1981 56 p refs (Contract ARPA ORDER 3520) (RAND-R-2667-ARPA; ISBN-0-8330-0361-3)

N84-75267# Georgia Inst. of Tech., Atlanta. **EGYPTIAN NATIONAL SYSTEM FOR SCIENTIFIC AND TECHNICAL INFORMATION: DESIGN STUDY**

V. SLAMECKA Nov. 1981 138 p refs (Contract NSF INT-79-24187) (PB84-179423; NSF/INT-81/C02)

N85-70560# Naval Postgraduate School, Monterey, CA. **INFORMATION MANAGEMENT IN THE DEPARTMENT OF DEFENSE: THE ROLE OF LIBRARIES**

G. D. WALTER ed., C. MILLER, ed., C. I. ALEXANDER, ed., and P. SPARKS, ed. Jul. 1983 160 p refs Presented at 24th Mil. Librarians Workshop, Monterey, Calif., 15-17 Oct. 1980 (AD-A130345; NPS0142-33-001)

N88-70735 Nuclear Fuel Services, Inc., Erwin, TN. **COMPUTER AIDED RETRIEVAL OF VITAL RECORDS**

STANFORD JOHNSON In DOE/Contractors Micrographics and Information Management Association, Proceedings of the 14th Annual Conference of the DOE/Contractors Micrographics and Information Management Association 9 p 1986 Avail. NTIS

N88-70736 Lawrence Livermore National Lab., CA. Technical Information Dept.

PROBLEMS OF STORING NONLINEAR DOCUMENTATION

GERALD R. GROW In DOE/Contractors Micrographics and Information Management Association, Proceedings of the 14th Annual Conference of the DOE/Contractors Micrographics and Information Management Association 8 p 1986 Avail. NTIS

N89-70023# California Univ., Berkeley. Lawrence Berkeley Lab.

USER'S GUIDE FOR THE TRAINING DATABASE SYSTEM, VERSION 2.1

A. K. KONRAD 2 Apr. 1986 53 p (Contract DE-AC03-76SF-00098) (DE88-016653; LBL-PUB-3043) Avail. NTIS

N89-70024# California Univ., Berkeley. Lawrence Berkeley Lab.

USER'S GUIDE FOR THE ENGNOTE DATABASE SYSTEM FOR LBL ENGINEERING NOTES, VERSION 1.2

A. KONRAD 30 Jul. 1986 35 p (Contract DE-AC03-76SF-00098) (DE88-016652; LBL-JB-3057) Avail. NTIS

MANAGEMENT INFORMATION SYSTEMS

Management information systems (MIS) were around long before IRM came on the scene, but have a focus which can assist IRM. In addition, IRM gives a better focus to MIS.

A88-55330*# **SPACE STATION INFORMATION SYSTEMS**

CLARENCE W. PITTMAN (NASA, Space Station Program Office, Reston, VA) IAF, International Astronautical Congress, 39th, Bangalore, India, Oct. 8-15, 1988. 10 p. (IAF PAPER 88-059)

The utility of the Space Station is improved, the ability to manage and integrate its development and operation enhanced, and the cost and risk of developing the software for it is minimized by three major information systems. The Space Station Information System (SSIS) provides for the transparent collection and dissemination of operational information to all users and operators. The Technical and Management Information System (TMIS) provides all the developers with timely and consistent program information and a project management 'window' to assess the project status. The Software Support Environment (SSE) provides automated tools and standards to be used by all software developers. Together, these three systems are vital to the successful execution of the program.

Author

A89-21808 **INTEGRATED RESOURCE SCHEDULING IN A DISTRIBUTED SCHEDULING ENVIRONMENT**

DAVID ZOCH and GARDINER HALL (Ford Aerospace Corp., Seabrook, MD) (NASA, 1988 Goddard Conference on Space Applications of Artificial Intelligence, Greenbelt, MD, May 24, 1988) Telematics and Informatics (ISSN 0736-5853), vol. 5, no. 3, 1988, p. 229-240. Previously announced in STAR as N88-30342. refs Copynght

The Space Station era presents a highly-complex multi-mission planning and scheduling environment exercised over a highly distributed system. In order to automate the scheduling process, customers require a mechanism for communicating their scheduling requirements to NASA. A request language that a remotely-located customer can use to specify his scheduling requirements to a NASA scheduler, thus automating the customer-scheduler interface, is described. This notation, Flexible Envelope-Request Notation (FERN), allows the user to completely specify his scheduling requirements such as resource usage, temporal constraints, and scheduling preferences and options. The FERN also contains mechanisms for representing schedule and resource availability information, which are used in the inter-scheduler inconsistency resolution process. Additionally, a scheduler is described that can accept these requests, process them, generate schedules, and return schedule and resource availability information to the requester. The Request-Oriented Scheduling Engine (ROSE) was designed to function either as an independent scheduler or as a

scheduling element in a network of schedulers. When used in a network of schedulers, each ROSE communicates schedule and resource usage information to other schedulers via the FERN notation, enabling inconsistencies to be resolved between schedulers. Individual ROSE schedulers are created by viewing the problem as a constraint satisfaction problem with a heuristically guided search strategy. Author

A89-27239

NASA ASTROPHYSICAL DATA SYSTEM (ADS) STUDY

G. F. SQUIBB (California Institute of Technology, Pasadena) and CYNTHIA Y. CHEUNG (BDM Corp., McLean, VA) IN: Astronomy from large databases: Scientific objectives and methodological approaches; Proceedings of the Conference, Garching, Federal Republic of Germany, Oct. 12-14, 1987. Garching, Federal Republic of Germany, European Southern Observatory, 1988, p. 489-496. Copynght

The objectives and current status of a study initiated by NASA with the goal of defining the functional concepts for an astrophysics data system that would serve the astrophysics community into and through the 1990s are summarized. Major functional areas of particular importance are identified and discussed. These include availability of data, observation planning and operations, inter- and intra-agency interfaces, research support, and distributed system attributes. V.L.

N84-14984# Oak Ridge Gaseous Diffusion Plant, TN.

MANAGEMENT INFORMATION SYSTEM FOR ENGINEERING

R. O. GREEN, J. M. MORRISON, and R. H. WANTLAND 30 Aug. 1983 13 p Presented at the Am. Soc. for Eng. Management Ann. Meeting, Washington, D.C., 17 Oct. 1983 (Contract W-7405-ENG-26) (DE84-001655; K/D-544; CONF-8310131-2) Avail: NTIS HC A03/MF A01

The engineering management information system (EMIS) is a computer based information system that integrates business management systems. System scope includes engineering work load, forecasting, cost, schedule, and selected administrative information. The EMIS was developed to provide a single source of current, official data. It is structured to meet a wide variety of needs, such as facilitating both uniform support of project management requirements associated with the uniquely different missions of the plants and control of the day to day operations of the engineering organization DOE

N84-20425# Meridian Corp., Falls Church, VA.

REQUIREMENTS ANALYSIS FOR FORWARD FUNDING TRACKING SYSTEM, VOLUME 1 Final Report

1 Dec. 1983 49 p (Contract MDA903-83-C-0342) (AD-A136840) Avail: NTIS HC A03/MF A01 CSCL 05/1

Volume I of this report focuses on the efforts undertaken with respect to the requirements for a Forward Funding Tracking System. The purpose of this effort was to analyze the feasibility and cost effectiveness of developing a forward funding tracking system which was capable of utilizing existing DARPA data bases. Used in this context, forward funding tracking refers to the process by which DARPA commits, obligates, and ultimately manages its fiscal resources. The motivation behind this analysis was the need to provide the DARPA Program Management Office (PMO) with sufficient information to enable an informed decision regarding the effectiveness of potential approaches to financial management. This need is a principal concern to the PMO, since it is the responsibility of this office to plan, manage, and control, at the aggregate level, DARPA program funds and project scheduling. In addition, within the context of the overall DARPA mission to pursue high-risk, high-payoff R&D, it is incumbent upon the technical program offices to manage individual projects from a technical, cost, and schedule point of view. Consequently, the coordination of the resource requirements for management of these individual projects is also a primary concern to the PMO. GRA

N84-20426# Meridian Corp., Falls Church, VA.

REQUIREMENTS ANALYSIS FOR MILESTONE TRACKING SYSTEM, VOLUME 2 Final Report

1 Dec. 1983 17 p (Contract MDA903-83-C-0342) (AD-A136841) Avail: NTIS HC A03/MF A01 CSCL 05/2

Volume II of this report concerns the efforts undertaken with respect to a Milestone Tracking System. The purpose of this task was to analyze the feasibility and cost effectiveness of developing milestone tracking system for internal use within DARPA which was capable of utilizing existing DARPA data bases. As defined in this document, milestones include a wide range of internal and external developments as well as decision points which may be of interest to DARPA managers. Specifically, these include: Technical achievements; Technical decision points; Financial decision points; Point of inter-project dependencies; and External events/considerations. The purposes initially identified for a milestone tracking system were threefold. First, the system was envisioned to be a mechanism to provide program managers with a concise representation of their program activities. Second, the system was conceived to provide an automatic prompting of milestone and/or critical events identified by the user. Third, the system was viewed as a mechanism to retain an historical data base on the conduct of DARPA programs. It soon became evident that the system also had utility in providing input to programming decision through the analysis of imbedded dependency networks. GRA

N84-21104# Human Engineering Labs., Aberdeen Proving Ground, MD.

HUMAN ENGINEERING GUIDELINES FOR MANAGEMENT INFORMATION SYSTEMS. CHANGE 1

D. E. HENDRICKS, P. W. KILDUFF, P. BROOKS, R. MARSHAK, and B. DOYLE 9 Jun. 1983 164 p (AD-A137808; AD-E900298) Avail: NTIS HC A08/MF A01 CSCL 05/5

These guidelines are intended to be an aid for the inclusion of human factors considerations in the design of Management Information Systems (MIS). The US Army Materiel Development and Readiness Command (DARCOM) is faced with a problem of continuing growth in workload combined with constrained or decreasing numbers of personnel. Like many other corporate entities, DARCOM has decided to accelerate the growth of computer utilization in order to increase the productivity of the workforce. In addition to increased computer utilization, there is emphasis toward distributive processing. Distributive processing places computer power in the hands of the functional used which allows the user to interact with (manipulate) the data. Unfortunately, empirical evidence indicates that expenditures on computers are not accompanied, necessarily, by the expected uses in productivity. The paper resulting from this research from this research presented selected personnel data relevant to the design of computer systems and problems of human-computer interaction divided into eight areas: the system design process, system downtime, training, input, data manipulation or retrieval, output, the work station, and communication (Hendricks, D.E., Man/Computer Interaction in DARCOM A paper presented at the 1980 AMEDD Psychology Symposium at Walter Reed Army Medical Center, Washington, DC, October, 1980.) Appendix A contains a list of three problems. With an overview of systems and user characteristics, the research team combined that information with the results of an extensive literature search to develop these guidelines for inclusion of human factors considerations during system development or system improvement. GRA

N84-21403*# National Aeronautics and Space Administration, Washington, DC.

NASA ADMINISTRATIVE DATA BASE MANAGEMENT SYSTEMS, 1983

J. D. RADOSEVICH, ed Apr. 1984 174 p refs Conf held in Greenbelt, Md., 25-26 May 1983 (NASA-CP-2304, NAS 1.55 2304, REPT-2) Avail: NTIS HC A08/MF A01 CSCL 05/2

MANAGEMENT INFORMATION SYSTEMS

Technical and management problems associated with the evaluation, selection, installation, and use of data base management system packages in the NASA administrative support environment are examined.

N84-21405*# National Aeronautics and Space Administration, Washington, DC.

ACTION INFORMATION MANAGEMENT SYSTEM (AIMS): A USER'S VIEW

M. WISKERCHEN *In its* NASA Admin. Data Base Management Systems, 1983 p 9-12 Apr. 1984

Avail. NTIS HC A08/MF A01 CSCL 05/2

The initial approach used in establishing a user-defined information system to fulfill the needs of users at NASA Headquarters was unsuccessful in bringing this pilot endeavor to full project status. The persistence of several users and the full involvement of the Ames Research Center were the ingredients needed to make the AIMS project a success. The lesson learned from this effort is that NASA should always work from its organizational strengths as a Headquarters-Center partnership.

A.R.H.

N84-21406*# National Aeronautics and Space Administration, Washington, DC.

AUTOMATED RTOP MANAGEMENT SYSTEM

P. HAYES *In its* NASA Admin. Data Base Management Systems, 1983 p 13-18 Apr. 1984

Avail. NTIS HC A08/MF A01 CSCL 05/2

The structure of NASA's Office of Aeronautics and Space Technology electronic information system network from 1983 to 1985 is illustrated. The RTOP automated system takes advantage of existing hardware, software, and expertise, and provides: (1) computerized cover sheet and resources forms; (2) electronic signature and transmission; (3) a data-based information system; (4) graphics; (5) intercenter communications; (6) management information; and (7) text editing. The system is coordinated with Headquarters efforts in codes R,E, and T.

A.R.H.

N84-21411*# National Aeronautics and Space Administration, Goddard Space Flight Center, Greenbelt, MD

AUTOMATED ADMINISTRATIVE DATA BASES

M. D. MARRIE, J. R. JARRETT, S. A. REISING, and J. E. HODGE *In* NASA Goddard Space Flight Center NASA Admin. Data Base Management Systems, 1983 p 85-88 Apr. 1984

Avail. NTIS HC A08/MF A01 CSCL 05/2

Improved productivity and more effective response to information requirements for internal management, NASA Centers, and Headquarters resulted from using automated techniques. Modules developed to provide information on manpower, RTOPS, full time equivalency, and physical space reduced duplication, increased communication, and saved time. There is potential for greater savings by sharing and integrating with those who have the same requirements.

A.R.H.

N84-21415*# National Aeronautics and Space Administration, Goddard Space Flight Center, Greenbelt, MD

NASA-WIDE STANDARD ADMINISTRATIVE SYSTEMS

P. SCHNECK *In* NASA Goddard Space Flight Center NASA Admin. Data Base Management Systems, 1983 p 145-152 Apr. 1984

Avail. NTIS HC A08/MF A01 CSCL 05/2

Factors to be considered in developing agency-wide standard administrative systems for NASA include uniformity of hardware and software; centralization vs. decentralization; risk exposure; and models for software development.

A.R.H.

N84-29802# General Electric Co., Saint Petersburg, FL. Neutron Devices Dept.

SUCCESS WITH DATA MANAGEMENT 4 AT THE DOE PINELLAS PLANT

M. A. DENTY 1983 13 p. Presented at the Honeywell Large Systems Users Assoc. Forum 37, San Diego, Calif., 16 Oct. 1983

(Contract DE-AC04-76DP-00656)

(DE84-008021; GEPP-OP-754A; CONF-8310260-1) Avail. NTIS HC A03/MF A01

The data management design and implementation approach used on-line systems are described. One system supports purchasing and general stockroom; the other supports engineering product configuration definition and engineering drawing distribution control. Data base administration practices, transaction processing considerations, and data base design techniques, as well as the applications themselves. Problems solved and pitfalls avoided.

DOE

N84-33266*# National Aeronautics and Space Administration, Washington, DC.

NASA ADMINISTRATIVE DATA BASE MANAGEMENT SYSTEMS, 1984

J. D. RADOSEVICH, ed. Sep. 1984 126 p refs. Conf. held in Hampton, Va., 6-7 Jun. 1984

(NASA-CP-2323; NAS 1.55:2323) Avail. NTIS HC A07/MF A01 CSCL 05/2

Strategies for converting to a data base management system (DBMS) and the implementation of the software packages necessary are discussed. Experiences with DBMS at various NASA centers are related including Langley's ADABAS/NATURAL and the NEMS subsystem of the NASA metrology information system. The value of the integrated workstation with a personal computer is explored.

N84-33269*# National Aeronautics and Space Administration, Goddard Space Flight Center, Greenbelt, MD.

ADMINISTRATIVE AUTOMATION IN A SCIENTIFIC ENVIRONMENT

J. R. JARRETT *In* NASA, Washington NASA Admin. Data Base Management Systems, 1984 p 21-28 Sep. 1984

Avail. NTIS HC A07/MF A01 CSCL 05/2

Although the scientific personnel at GSFC were advanced in the development and use of hardware and software for scientific applications, resistance to the use of automation or purchase of terminals, software and services, specifically for administrative functions was widespread. The approach used to address problems and constraints and plans for administrative automation within the Space and Earth Sciences Directorate are delineated. Accomplishments thus far include reduction of paperwork and manual efforts, improved communications through teletype and committees, additional support staff; increased awareness at all levels on ergonomic concerns and the need for training, better equipment; improved ADP skills through experience; management commitment; and an overall strategy for automating.

A.R.H.

N84-33270*# National Aeronautics and Space Administration, John F. Kennedy Space Center, Cocoa Beach, FL.

THE ADMINISTRATIVE WINDOW INTO THE INTEGRATED DBMS

G. H. BROCK *In* NASA, Washington NASA Admin. Data Base Management Systems, 1984 p 29-50 Sep. 1984

Avail. NTIS HC A07/MF A01 CSCL 05/2

A good office automation system manned by a team of facilitators seeking opportunities to serve end users could go a long way toward defining a DBMS that serves management. The problems of DBMS organization, alternative approaches to solving some of the major problems, problems that may have no solution, and how office automation fits into the development of the manager's management information system are discussed.

A.R.H.

N84-34202# Sandia National Labs., Albuquerque, NM

SANDIA NATIONAL LABORATORIES ADMINISTRATIVE DATA PROCESSING SYSTEMS

R. H. MCGEE, ed. and I. R. MITCHELL, ed. May 1984 110 p (Contract DE-AC04-76DP-00789)

(DE84-014328; SAND-84-0231) Avail. NTIS HC A06/MF A01

The administrative data processing systems at Sandia Laboratories are divided into common systems, people systems,

property systems, procurement systems, and financial systems. The common systems consist of a data dictionary/directory system, which captures data field descriptions, common data input and retrieval systems, and the accounting title master system, the central authority for the accounting system. The people systems support personnel activities at Sandia. The property systems support property, material, inventory, documents, and records. Descriptions of property control, property accounting, property inventory control system, classified material accountability, classified document accountability, and others, are included. Procurement systems support procurement activity, including production of hard copy, summarized data, and procurement reports. Financial systems include payroll, employee accounts, financial modeling, budget, and others. SB

N85-11906# Naval Ship Research and Development Center, Bethesda, MD. Computation Mathematics/Logistics Dept
A MANAGEMENT WORKSTATION CONCEPT
S. BERKOWITZ Jul. 1984 35 p
(AD-A145617; DTNSRDC/CMLD-84-17) Avail NTIS HC A03/MF A01 CSDL 05/2

The David Taylor Naval Ship R&D Center is designing an automated, paperless environment for logistics functional managers at HQ, Naval Supply System Command. This paper asserts that technology is currently available to radically change the way that the logistics or financial manager deals with his business environment. The change would affect both quantitative and qualitative aspects of his work environment. In principle, the manager could summon up large volumes of data with a touch of a finger and gain analytical insight by interacting with and interpreting graphics displays. He could instantaneously communicate his newly-found perceptions and decisions through voice and hand-drawn sketches to a select, remote audience without benefit of keyboard and paper. As a practical matter, however, the separate technologies that would accommodate such office power still need to be integrated at a marketable price. Moreover, keyboard and paper may be preferable modes of entry for some managers. Until continuous speech and unconstrained hand-lettered recognition become practical realities for large vocabularies, mundane activities such as editing (formatting, composition, publication, distribution) may best be left to a support staff. GRA

N85-12790# Lesley Coll., Cambridge, MA
MAINTENANCE MANAGEMENT INFORMATION AND CONTROL SYSTEM (MMICS): ADMINISTRATIVE BOON OR BURDEN
T. P. MURRAY Mar. 1984 59 p
(AD-A145762) Avail. NTIS HC A04/MF A01 CSDL 05/2

Thirteen years of Air Force design and development went into the Maintenance Management Information and Control System (MMICS), an automated maintenance information system, because maintenance managers need fast, up-to-date maintenance-related data. MMICS is an on-line computer system accessed through remote terminals located in the work area. These terminals communicate with a central base-level computer via telephone circuits. MMICS has wide application and provides automated information to managers of aircraft, missile and communications-electronic organizations. MMICS is currently in operation at one hundred forty Air Force units located at more than one hundred bases. Approximately eight hundred remote terminals and five hundred line printers are installed and in use worldwide. In aircraft maintenance organizations, MMICS provides information on changing aircraft and equipment conditions, parts requirements, aircraft schedules, equipment status and personnel resources and training. Personnel training is an important aspect of a manager's job and is vital to any organization that must maintain a proficient and experienced work force. The purpose of the project is to examine, determine and evaluate the benefit of the MMICS to managers and supervisors in conducting and monitoring training and training programs within their sections. GRA

N85-13675# Pacific Northwest Lab., Richland, WA
EXECUTIVE INFORMATION SYSTEM
M. VITULLO, C. WINTER, and D. R. JOHNSON Jul. 1984 96 p
(Contract DE-AC06-76RL-01830)
(DE84-015355, PNL-5190) Avail NTIS HC A05/MF A01

The Executive Information System (EIS) is a computer-based information handling system. The system was designed and implemented for energy conversion and utilization technologies to allow program managers easy access and tracking of certain types of reporting at various levels of management interaction, to simplify the handling of program-related data, and to streamline the preparation of reporting documents and responses to requests for information from the program. The EIS is especially useful in assisting DOE program managers in the routine dissemination of reports and information. The characteristics of each component of the EIS are discussed. A user's guide to the EIS is included. DOE

N85-23451# Los Alamos Scientific Lab., NM.
INTEL IDIS EVALUATION

J. M. CHADLE and M. E. GLASSMIRE 1984 7 p Presented at the Assoc. of System 2000 Users for Technol. Exchange (ASTUTE) Conf., Hilton Head, S.C., 11-15 Nov. 1984
(Contract W-7405-ENG-36)
(DE85-003748, LA-UR-84-3537, CONF-8411114-2) Avail. NTIS HC A02/MF A01

An evaluation of a computer system called the Intel Database Information System (IDIS), which was recently performed at the Los Alamos National Laboratory is discussed. The evaluation consisted of the development of a possible application for the Compensation and Benefits Section of the Personnel Administration Division at Los Alamos. DOE

N85-26439# National Aeronautics and Space Administration, Washington, DC
MANAGEMENT: A BIBLIOGRAPHY FOR NASA MANAGERS
Mar. 1985 183 p
(NASA-SP-7500(19), NAS 121.7500(19)) Avail NTIS HC A09 CSDL 05/1

This bibliography lists 706 reports, articles, and other documents introduced into the NASA scientific and technical information system in 1984. Entries, which include abstracts, are arranged in the following categories: human factors and personnel issues; management theory and techniques; industrial management and manufacturing; robotics and expert systems; computers and information management; research and development; economics, costs, and markets; logistics and operations management; reliability and quality control; and legality, legislation, and policy. Subject, personal author, corporate source, contract number, report number, and accession number indexes are included. A R.H.

N85-27739# Naval Postgraduate School, Monterey, CA
COMPILATION OF ABSTRACTS OF THESES SUBMITTED BY CANDIDATES FOR DEGREES Report, for 1 Oct. 1982 - 30 Sep. 1983
Jun. 1984 509 p
(AD-A151722, NPS-012-84-004PR) Avail NTIS HC A22/MF A03 CSDL 05/2

This publication contains the abstracts of theses submitted during the period 1 October 1982 - 30 September 1983 by candidates for Masters, Engineers, and Doctors degrees at the Naval Postgraduate School, Monterey, CA 93943. Degrees are in Aeronautical engineers, mechanical engineers, applied mathematics, applied science, computer science, electrical engineering, information systems, management, mechanical engineering, meteorology and oceanography, operations research, national security affairs and others. GRA

MANAGEMENT INFORMATION SYSTEMS

N85-27752# Naval Postgraduate School, Monterey, CA.
DATA DICTIONARY DESIGN AS A STEPPING-STONE TO DBMS (DATA BASE MANAGEMENT SYSTEM) IMPLEMENTATION IN THE INDOONESIAN ARMY DATA COLLECTING AND PROCESSING SERVICE M.S. Thesis
B. SUTEDJO Sep. 1984 86 p
(AD-A152101) Avail: NTIS HC A05/MF A01 CSCL 09/2

The organizational structure, tasks, and system configuration of the Indonesian Army Data Collecting and Processing Service (DISPULLAHTAD) are presented briefly in order to provide a background for succeeding discussions. Features of available data dictionary systems (DDS) and the initial design of a data dictionary for current applications at DISPULLAHTAD are presented. Finally, based on that initial design, a recommendation for database management system (DBMS) implementation is discussed dictionary schema, DISPULLAHTAD, Data dictionary features,

GRA

N85-29849# Logistics Management Inst., Bethesda, MD
IMPROVING THE DEFENSE ENERGY INFORMATION SYSTEM (DEIS)

M. J. KONVALINKA and J. E. LENGEL Jan. 1985 43 p
(Contract MDA903-81-C-0106)
(AD-A153524; LMI-ML405) Avail: NTIS HC A03/MF A01 CSCL 05/2

This report provides recommendations for improvements to the Defense Energy Information System (DEIS), an automated management information system with which DOD monitors its supplies and consumption of energy. DEIS provides information about DOD's bulk petroleum products: inventory, consumption, resupply, and sale - as well as inventory and consumption of energy for utility services. The recommendations focus on the DEIS operational environment, the need for more energy management reports, and the use of microcomputers with DEIS.

GRA

N85-29854# National Bureau of Standards, Gaithersburg, MD
Center for Applied Mathematics.
NATIONAL ARCHIVES AND RECORDS SERVICE (NARS) TWENTY YEAR PRESERVATION PLAN

A. CALMES (National Archives and Records Service), R. SCHOFFER, and K. R. EBERHARDT 10 Jan. 1985 70 p
Sponsored by National Archives and Records Service
(PB85-17764J; NBSIR-85-2999) Avail: NTIS HC A04/MF A01 CSCL 05/2

The purpose of this preservation plan is to identify types, extent of programs and resource requirements to bring the preservation needs of the National Archives and Records Service (NARS) to a current status of the end of twenty-two years. Data for developing the plan was derived from a scientific survey of holdings, data obtained from interviews with NARS' archivists, earlier studies and observation of operations. The recommended plan is divided into nine action categories: (1) environmental control; (2) holdings maintenance of current holdings; (3) holdings maintenance as a part of the accessioning process; (4) interception, assessment and protection at time of use; (5) systematic duplication of impermanent documents; (6) reproduction of frequently used documents; (7) laboratory treatment of intrinsically valuable documents; (8) laboratory conservation of treasures; and (9) preservation of noncontextual records

Author (GRA)

N85-30967# R-K Research and System Design, Malibu, CA
TEST AND EVALUATION MASTER PLAN (TEMP) FOR THE NAVY OCCUPATIONAL HEALTH INFORMATION MANAGEMENT SYSTEM (NOHIMS). PHASE 1: APPENDIX A THROUGH APPENDIX U Final Report

24 Apr. 1985 417 p
(Contract N00014-84-C-0601)
(AD-A15417J) Avail: NTIS HC A18/MF A03 CSCL 09/2

Under the work statement for Phase 1 of this Contract the Contractor was tasked to develop a Test and Evaluation Master Plan (TEMP) for the Navy Occupational Health Information Management System (NOHIMS) that addresses nine areas of

system functioning: responsiveness to Navy needs and requirements, design suitability; efficiency, enhancement of medical monitoring; use of the NOHIMS database for legal evidence, usability of NOHIMS; cost analysis; transferability of NOHIMS; and NOHIMS as an aid to research. The Final Report for Phase 1 of this contract is composed of the following set of Structured Interviews for Medical Care Provider Users, Industrial Users, (Industrial Hygienists/Work Center Supervisors), Data Entry Personnel; Contracted NOHIMS Developers, NHRC NOHIMS Developers; NHRC Interim System Developers, Test Site Administrators/System Managers, Higher Level Navy Management, NEHC Project Management Team, Navy Legal Counsel, and for NHRC/Bremerton ADP Personnel; Stated Navy Goals and Objectives, System Description and Design Features, Standard Reports, Data Collection Forms/Sources; Medical Monitoring and Care Goals, Information Needs for Legal Purposes, Development Costs and Intended Benefits; Description of Government-Owned Occupational Health Information Systems, Description of Commercially Available Occupational Health Information Systems, and Description of Navy Interim Occupational Health Information System

GRA

N86-13227# Corps of Engineers, Saint Paul, MN.
INFORMATION SYSTEMS PLAN

Apr. 1985 272 p
(AD-A157911) Avail: NTIS HC A12/MF A02 CSCL 09/2

The purpose of this study is to analyze what information the St. Paul District uses, who needs to share data, what are the costs of information management, and who should be responsible for information management. This pilot project authorizes the District to demonstrate the feasibility of automated approaches through the acquisition and use of high technology equipment.

GRA

N86-15171*# McDonnell-Douglas Technical Services Co., Inc., Houston, TX.

TECHNICAL AND MANAGEMENT INFORMATION SYSTEM: THE TOOL FOR PROFESSIONAL PRODUCTIVITY ON THE SPACE STATION PROGRAM

G. MONTOYA and P. BOLDON In NASA. Johnson (Lyndon B.) Space Center R and D Productivity. New Challenges for the US Space Program p 149-164 1985 refs
Avail: NTIS HC A25/MF A04 CSCL 05/1

The Space Station Program is highly complex not only in its technological goals and requirements but also in its organizational structure. Eight Contractor teams supporting four NASA centers plus Headquarters must depend on effective exchange of information--the lifeblood of the program. The Technical and Management Information System (TMIS) is the means by which this exchange can take place. Value of the TMIS in increasing productivity comes primarily from its ability to make the right information available to whomever needs it when it is needed. Productivity of the aerospace professional and how it can be enhanced by the use of specifically recommended techniques and procedures for information management using the TMIS are discussed.

Author

N86-16153# Navy Personnel Research and Development Center, San Diego, CA.

IMPLEMENTATION OF MULTIFUNCTION INFORMATION SYSTEMS AT THREE NAVY FACILITIES Final Report, Jul.

1982 - Sep. 1983
J. P. SHEPSON, V. N. HULTON, S. D. RAMRAS-BERLIN, and T. T. TRINH Jan. 1985 40 p
(AD-A157797, NPRDC-TR-85-17) Avail: NTIS HC A03/MF A01 CSCL 05/1

The accelerated rate of the introduction of office technology systems in both the private and public sectors has had important effects on organizational functioning. In light of the developments and increased usage of this technology, it is important to address issues and problems that arise in the course of implementing these new systems. The objective of this investigation was to evaluate the impact of pilot projects employing multifunction

information systems at three Navy facilities. The major aims of the study were to determine: (1) the receptiveness of organizational personnel toward the technological system, (2) pattern of usage of the systems, (3) the major factors impeding and facilitating operation of the system, (4) the impact of the systems on work performance, and (5) the organizational problems and issues associated with the introduction and implementation of the systems. A cross section of civil service personnel (39 support, 44 technical, and 35 managerial) involved with the implementation and/or use of the systems at the three sites was interviewed. The interviews were designed to obtain information about acceptance of the system, usage, system impact on performance, and system implementation problems. The results indicated that resistance to change was not a major problem in the introduction and implementation of these systems. Barriers encountered by members of the organization such as insufficient management commitment and lack of personnel and material resources were more serious problems. GRA

N86-24552# Naval Postgraduate School, Monterey, CA.
MICROCOMPUTER-BASED DETACHMENT ADMINISTRATIVE MANAGEMENT SYSTEM FOR THE LAMPS (LIGHT AIRBORNE MULTI-PURPOSE SYSTEM) COMMUNITY. A REQUIREMENTS ANALYSIS M.S. Thesis
G. F. SMITH Sep. 1985 157 p
(AD-A162366) Avail: NTIS HC A08/MF A01 CSDL 09/2

This thesis presents a requirements analysis of a microcomputer based system to be used by sea-going Light Airborne Multipurpose System (LAMPS) detachment for administrative data management and recurring reports generation. Included are the results of user interviews which were conducted to determine possible system functions. These functions, through analysis, are presented in a hierarchical charting with data flow diagrams and accompanying processing narratives. System data is then presented in data dictionary format. Recommendations are made as to possible system implementation and design. GRA

N86-24561# Mitre Corp., Bedford, MA.
AIR FORCE GEOPHYSICS LABORATORY MANAGEMENT INFORMATION SYSTEM STUDY Final Report
A. A. HAYEN Nov. 1985 40 p
(Contract F19628-84-C-0001)
(AD-A161910; MTR-9338; ESD-TR-85-114) Avail: NTIS HC A03/MF A01 CSDL 05/1

MITRE has conducted a study to define the management information needs of Air Force Geophysics Laboratory (AFGL) managers and to investigate alternative approaches for the implementation of a management information system (MIS) at AFGL. The study summarizes current management and administrative practices at AFGL. Requirements have been identified for automating several currently manual functions to compile accurate and timely information to better manage and plan AFGL programs. This document describes the functions and relative priorities of five MIS subsystems and provides suggestions for implementation solutions. Creation of a detailed Development Plan is recommended as the follow-on task. Author (GRA)

N86-25999# Stanford Univ., CA Dept of Statistics
DATA BASE MANAGEMENT: PROCEEDINGS OF A CONFERENCE
31 Jul. 1985 307 p refs Conference held in Monterey, Calif. 1-2 Nov. 1984
(Contract N00014-76-C-0476, NR PROJ 042-267)
(AD-A158285) Avail: NTIS HC A14/MF A02 CSDL 09/2
Data base management systems were discussed. Topics included data base organization for statistical analysis, machine learning, information retrieval, information management, and computer architecture.

N86-27108* National Aeronautics and Space Administration, Washington, DC.
MANAGEMENT: A BIBLIOGRAPHY FOR NASA MANAGERS

Apr. 1986 169 p
(NASA-SP-7500(20); NAS 1.21:7500(20)) Avail: NTIS HC A08 CSDL 05/1

This bibliography lists 707 reports, articles and other documents introduced into the NASA scientific and technology information system in 1985. Items are selected and grouped according to their usefulness to the manager as manager. Citations are grouped into ten subject categories: human factors and personnel issues; management theory and techniques; industrial management and manufacturing; robotics and expert systems; computers and information management; research and development; economics, costs, and markets; logistics and operations management; reliability and quality control; and legality, legislation, and policy. Author

N87-20833* National Aeronautics and Space Administration, Washington, DC.

MANAGEMENT: A BIBLIOGRAPHY FOR NASA MANAGERS (SUPPLEMENT 21)

Apr. 1987 70 p
(NASA-SP-7500(21); NAS 1.21:7500(21)) Avail: NTIS HC A04 CSDL 05/1

This bibliography lists 664 reports, articles and other documents introduced into the NASA scientific and technical information system in 1986. Items are selected and grouped according to their usefulness to the manager as manager. Citations are grouped into ten subject categories: human factors and personnel issues; management theory and techniques; industrial management and manufacturing; robotics and expert systems; computers and information management; research and development; economics, costs, and markets; logistics and operations management; reliability and quality control; and legality, legislation, and policy. Author

N87-24233# Oak Ridge National Lab., TN.
THE SUCCESS OR FAILURE OF MANAGEMENT INFORMATION SYSTEMS: A THEORETICAL APPROACH
T. R. CURLEE and B. T. TONN Mar. 1987 29 p
(Contract DE-AC05-84OR-21400)
(DE87-007802; ORNL/TM-10320) Avail: NTIS HC A03/MF A01

Work has been done by various disciplines to address the reasons why modern, computerized management information systems either succeed or fail. However, the studies are not based on a well-defined conceptual framework and the focus has been narrow. This report presents a comprehensive conceptual framework of how an information system is used within an organization. This framework not only suggests how the use of an information system may translate into productivity improvements for the implementing organization but also helps to identify why a system may succeed or fail. A major aspect of the model is its distinction between the objectives of the organization in its decision to implement an information system and the objectives of the individual employees who are to use the system. A divergence between these objectives can lead to system under-utilization or misuse at the expense of the organization's overall productivity. DOE

N88-17207*# Air Force Human Resources Lab., Wright-Patterson AFB, OH.

IMIS: INTEGRATED MAINTENANCE INFORMATION SYSTEM. A MAINTENANCE INFORMATION DELIVERY CONCEPT

JOSEPH C. VONHOLLE In NASA, Lyndon B. Johnson Space Center, Houston, Texas, First Annual Workshop on Space Operations Automation and Robotics (SOAR 87) p 1-9 Oct 1987

Avail: NTIS HC A23/MF A04 CSDL 05/2

The Integrated Maintenance Information System (IMIS) will optimize the use of available manpower, enhance technical performance, improve training, and reduce the support equipment and documentation needed for deployment. It will serve as the technician's single, integrated source of all the technical information required to perform modern aircraft maintenance. Author

MANAGEMENT INFORMATION SYSTEMS

N88-25374# Pentagon Library, Washington, DC.
MANAGEMENT AND THE EXECUTIVE Final Report, 1 Jan. 1982 - 31 Dec. 1987
1 Jan. 1988 44 p
(AD-A190778) Avail: NTIS HC A03/MF A01 CSCL 05/1

This bibliography lists books and periodical articles covering such topics as personnel management, corporate planning, decision-making, executive training, leadership, management information systems, and organizational behavior. In addition, it highlights some special interest areas: women executives, chief executive officers, job stress, and ethics. An index of management topics is appended to assist readers in finding related items.

GRA

N89-10070# Jet Propulsion Lab., California Inst. of Tech., Pasadena.

DEEP SPACE NETWORK RESOURCE SCHEDULING APPROACH AND APPLICATION

WILLIAM C. EGGEMEYER and ALAN BOWLING In NASA, Goddard Space Flight Center, Proceedings of 1987 Goddard Conference on Space Applications of Artificial Intelligence (AI) and Robotics 9 p 1987

Avail: NTIS HC A99/MF E03 CSCL 05/1

Deep Space Network (DSN) resource scheduling is the process of distributing ground-based facilities to track multiple spacecraft. The Jet Propulsion Laboratory has carried out extensive research to find ways of automating this process in an effort to reduce time and manpower costs. This paper presents a resource-scheduling system entitled PLAN-IT with a description of its design philosophy. The PLAN-IT's current on-line usage and limitations in scheduling the resources of the DSN are discussed, along with potential enhancements for DSN application. Author

N89-10071# Computer Sciences Corp., Beltsville, MD. System Sciences Div.

SPACE STATION PLATFORM MANAGEMENT SYSTEM (PMS) REPLANNING USING RESOURCE ENVELOPES

JOY LEE BUSH, ANNA CRITCHFIELD, and AUDREY LOOMIS In NASA, Goddard Space Flight Center, Proceedings of 1987 Goddard Conference on Space Applications of Artificial Intelligence (AI) and Robotics 17 p 1987

Avail: NTIS HC A99/MF E03 CSCL 05/1

One of the responsibilities of the Space Station Platform Management System (PMS) is to maintain constraint-free, short-term plans for platform and free-flyer activities. Both the replanning function and the associated constraint-checking function are viewed as potentially requiring expert system assistance. The PMS Resource Envelope Scheduling System (PRESS) expert system, which is currently under development, is described. The PRESS capabilities will include the following: plan, replan, and perform constraint checking using resource envelopes resembling those required for telepresence, initialize itself using the results to a previous run, infer the replanning needs associated with a change in resource availability; allow the user to determine the level of interaction (including an advisory capability) with the system during execution; and generate both a graphic timeline and a report as output. The PRESS is being developed on an IBM PC/AT using TeKnowledge, Inc.'s M.1 expert system shell. The PRESS activity definitions and constraints are based on those defined for the Cosmic Background Explorer (COBE) mission scheduled for launch in early 1989. Author

N89-10078# National Aeronautics and Space Administration, Goddard Space Flight Center, Greenbelt, MD.

AUTOMATION OF SPACECRAFT CONTROL CENTERS

ROBERT DUTILLY In its Proceedings of 1987 Goddard Conference on Space Applications of Artificial Intelligence (AI) and Robotics 9 p 1987

Avail: NTIS HC A99/MF E03 CSCL 05/1

The objective is to describe the further automation of the Payload Operations Control Centers, specifically the Mission Operations Room, by using a series of expert systems interconnected together. The feasibility of using expert systems in

the Mission Operations Room is presently being determined. The expert system under development is called the Communications Link Expert Assistance Resource (CLEAR) project. It is the first control center expert system being designed and implemented at Goddard. It will demonstrate the feasibility and practicality of expert systems in a real-time control center environment. There is a two-fold purpose. First is to briefly describe the present effort of the CLEAR expert system under development. The second is to describe how a series of interacting expert systems could be developed to almost totally automate the Mission Operations Room within the control center. How these expert systems would be put together and what functions they could perform in the control center is described. These efforts will provide a great deal of applicability toward the automation of the space station Author

N89-13912# San Jose State Univ., CA.

THE LANGUAGE OF DATA: A GENERAL THEORY OF DATA

JAMES L. DOLBY, NANCY CLARK, ed., and WILLIAM H. ROGERS (RAND Corp., Santa Monica, Calif.) In Colorado State Univ., Computer Science and Statistics, Proceedings of the 18th Symposium on the Interface p 96-103 26 Aug. 1987

Avail: NTIS HC A20/MF A03 CSCL 12/6

The general theory represented by the Language of Data has a number of implications for the communication of information, a documentation system for databases, storage and retrieval systems, computational aids for analysis, and the construction of survey instruments. More important, it provides a general framework for a systematic approach to the communication of information through data. Author

N89-13913# San Jose State Univ., CA.

INTELLIGENT DATA MANAGEMENT

HENSON GRAVES and RUTH MANOR In Colorado State Univ., Computer Science and Statistics, Proceedings of the 18th Symposium on the Interface p 104-109 26 Aug. 1987 Prepared in cooperation with Tel-Aviv Univ., Israel

Avail: NTIS HC A20/MF A03 CSCL 12/6

Intelligent computer support for statistical data analysis requires a system in which descriptive information is represented and used deductively to answer questions from data, definitions and assumptions. The knowledge representation requirements for supporting data analysis include flexibility in interactively introducing changes in the system and the capability of handling data revision and data discrepancy. Outlined here are a formalism for representing descriptive information and auxiliary assumptions for data analysis. This formalism is currently being developed and implemented in the Algos computational system Author

N89-13954# Department of Agriculture, Washington, DC.

COMPUTER-AIDED SURVEY METHODS

ROBERT D. TORTORA, FREDERIC A. VOGEL, and J. MERRILL SHANKS (California Univ., Berkeley) In Colorado State Univ., Computer Science and Statistics, Proceedings of the 18th Symposium on the Interface p 411-413 26 Aug. 1987

Avail: NTIS HC A20/MF A03 CSCL 12/6

Computer-assisted survey methods that are being planned, tested, and implemented by the Statistical Reporting Service (SRS) of the U.S. Department of Agriculture for its 44 data collection offices across the United States are described. The major activities include developing a data management system along with computer-aided sampling frame maintenance, computer-aided survey management, and computer-assisted telephone interviewing systems. Author

N89-14177# Idaho National Engineering Lab., Idaho Falls, Systems Architecture.

INFORMATION RESOURCE MANAGEMENT: AN ARCHITECTURAL CONCEPT/EXPERIENCE

M. KENT LINSENMANN 1988 20 p Presented at the International Software AG Users Group, Nashville, Tenn., 25 Sep 1988

(Contract DE-AC07-76ID-01570)

(DE88-015184, EGG-M-88216, CONF-8809112-1) Avail NTIS HC A03/MF A01

This paper contains an integrated Database System strategy utilizing a System Architecture concept comprised of the following components: Data Integration (Data Administration and Database Administration); Single-System change (Application Architecture); and Business System Integration
DOE

N89-14933*# OAO Corp Greenbelt, MD.
PROMIS (PROCUREMENT MANAGEMENT INFORMATION SYSTEM) Final Report
23 Sep. 1987 23 p
(Contract NAS8-35928)
(NASA-CR-179395, NAS 1.26 179395) Avail NTIS HC A03/MF A01 CSCL 05/1

The PROcurement Management Information System (PROMIS) provides both detailed and summary level information on all procurement actions performed within NASA's procurement offices at Marshall Space Flight Center (MSFC). It provides not only on-line access, but also schedules procurement actions, monitors their progress, and updates Forecast Award Dates. Except for a few computational routines coded in FORTRAN, the majority of the systems is coded in a high level language called NATURAL. A relational Data Base Management System called ADABAS is utilized. Certain fields, called descriptors, are set up on each file to allow the selection of records based on a specified value or range of values. The use of like descriptors on different files serves as the link between the files, thus producing a relational data base. Twenty related files are currently being maintained on PROMIS.
Author

N89-14946*# City Univ. of New York, Staten Island Dept. of Computer Science.
RESIDENT DATABASE INTERFACES TO THE DAVID SYSTEM, A HETEROGENEOUS DISTRIBUTED DATABASE MANAGEMENT SYSTEM Final Report
MARSHA MOROH 15 Dec 1988 12 p
(Contract NAG5-763)
(NASA-CR-184615, NAS 1.26.184615) Avail NTIS HC A03/MF A01 CSCL 05/2

A methodology for building interfaces of resident database management systems to a heterogeneous distributed database management system under development at NASA, the DAVID system, was developed. The feasibility of that methodology was demonstrated by construction of the software necessary to perform the interface task. The interface terminology developed in the course of this research is presented. The work performed and the results are summarized.
Author

N89-14948*# University of Southwestern Louisiana, Lafayette Center for Advanced Computer Studies.
USL/DBMS NASA/RECON WORKING PAPER SERIES. STANDARDS Final Report, 1 Jul. 1985 - 31 Dec. 1987
WAYNE D. DOMINICK, ed. and FRANK Y. CHUM 29 Mar. 1984 38 p Revised Prepared in cooperation with Southern Univ., Baton Rouge, LA
(Contract NASW-3846; NGT-19-010-900)
(NASA-CR-184508, NAS 1.26.184508) Avail NTIS HC A03/MF A01 CSCL 05/2

The USL/DBMS NASA/RECON Working Paper Series contains a collection of reports representing results of activities being conducted by the Computer Science Department of the University of Southwestern Louisiana pursuant to the specifications of NASA Contract number NASW-3846. The work on this portion of the contract is being performed jointly by the University of Southwestern Louisiana and Southern University. This report contains the full set of standards for the development, formatting, reviewing, and issuance of entries within the USL/DBMS NASA/RECON Working Paper Series.
Author

N89-14966*# University of Southwestern Louisiana, Lafayette. Center for Advanced Computer Studies.
NATURAL LANGUAGE QUERY SYSTEM DESIGN FOR INTERACTIVE INFORMATION STORAGE AND RETRIEVAL SYSTEMS. PRESENTATION VISUALS M.S. Thesis Final Report, 1 Jul. 1985 - 31 Dec. 1987
WAYNE D. DOMINICK, ed. and H-HSIUNG LIU 22 Apr. 1985 53 p Prepared in cooperation with Southern Univ., Baton Rouge, LA
(Contract NASW-3846; NGT-19-010-900)
(NASA-CR-184526, NAS 1.26 184526, DBMS.NASA/RECON-18)
Avail: NTIS HC A04/MF A01 CSCL 05/2

This Working Paper Series entry represents a collection of presentation visuals associated with the companion report entitled Natural Language Query System Design for Interactive Information Storage and Retrieval Systems, USL/DBMS NASA/RECON Working Paper Series report number DBMS NASA/RECON-17.
Author

N89-15787# Oak Ridge National Lab., TN. Data Systems Research and Development Program
USERS MANUAL FOR THE RESEARCH NOTES SYSTEM (VERSION 1.5)
DEAN S. HARTLEY, III May 1988 207 p
(Contract DE-AC05-84OR-21400)
(DE89-001391, ORNL/DSRD/TM-18) Avail NTIS HC A10/MF A02

The purpose of the Research Notes System (RNS) is to help collect and organize information. The information the RNS manages consists of notes which are typed into the system, references to the source of the note, and subject classifications of the note. The RNS may be used to organize the reference material (books, reprints of papers, etc.) which researchers typically accumulate, or it may be used in a directed search for a project, or both. The Research Notes System is a set of dBASE III programs and relational databases which meets this need. The RNS provides ease of data entry through the use of relational databases to minimize redundant data entry. The information is organized by keying each note to one or more user-defined subjects. The RNS also provides several retrieval methods for use during intermediate research phases and in the final article writing phase. The RNS provides an update function so that a Master RNS may be maintained with multiple users of RNS copies. This document details the procedures necessary to use the RNS. Areas covered include benefits, input data dictionaries and tips on using the RNS, as well as detailed operating instructions. The operating instructions describe each operating step and each option with complete illustrations of the screen prompts and displays. The installation section describes how to use the system on a hard disk (the recommended hardware for the system) and on floppy disks.
DOE

N89-16407# Department of the Air Force, Washington, DC Artificial Intelligence Center.
INFORMATION MANAGEMENT EXPERT SYSTEMS
ROBERT MILNE In National Academy of Sciences - National Research Proceedings of the Workshop on AI (Artificial Intelligence), and Distributed Problem Solving p 159-165 May 1985
Avail: NTIS HC A08/MF A01 CSCL 09/2

A collection of ideas and history related to artificial intelligence and information management is given. The history and the purpose of the Army Artificial Intelligence Center is given. Frame-based constraint systems and their role are described. A few comments are made regarding how knowledge engineering works in reality.
Author

N89-19903# Carnegie-Mellon Univ. Pittsburgh, PA. Software Engineering Inst.
ISTAR EVALUATION Final Technical Report
MARC H. GRAHAM and DANIEL H. MILLER Jul 1988 212 p
(Contract F19628-85-C-0003)

MANAGEMENT INFORMATION SYSTEMS

(AD-A201345, CMU/SEI-88-TR-3, ESD-TR-88-004) Avail NTIS HC A10/MF A02 CSCL 12/6

ISTAR is a software development and project management environment that integrates management and technical development activities. It is based on the contract model, whose primary objective is that every individual in the organization know what is expected of him or her. To accomplish this, the relationships among the individuals of the organization are modeled as contracts. Each contract has a specification of the work to be performed under it, a person to whom it has been assigned, and a person for whom the work is being done. Chapter 2 describes the contract model both as a project management structure and as a data storage structure. It was found that the emphasis on project hygiene leads to a strict separation of user data spaces which causes excess data storage requirements and data movement operations. This, in turn, may make data sharing and cooperative work more difficult. ISTAR's user interface is also described in Chapter 2. That interface has a high degree of consistency because all user interaction is mediated through Imperial Software's proprietary editor, E, which is window- and menu-oriented. Chapter 3, which forms the bulk of the report, deals with the functional areas (that is, those tool sets supplied with ISTAR) which were of most interest to us. The remaining tool sets are described in Chapter 4. GRA

N89-21576# Massachusetts Inst of Tech, Cambridge Microsystems Research Center.

COMPUTER-AIDED FABRICATION SYSTEM

IMPLEMENTATION Semiannual Technical Report, 1 Oct. 1987 - 31 Mar. 1988

PAUL PENFIELD, JR. 31 Mar. 1988 31 p
(Contract N00014-85-K-0213)

(AD-A203651) Avail. NTIS HC A03/MF A01 CSCL 12/6

The purpose of the work reported on here is to design, develop, implement, and deploy information management systems to aid in the fabrication of integrated circuits, particularly in the context of flexible manufacturing. The work includes: the development of a hardware-software system, named CAFE, and the support of this program and its use in the MIT Integrated Circuits Laboratory. CAFE should support both manufacturing of ICs and the design of processes, so part of the effort is directed toward the development of a suitable process-development environment. Other projects are concerned with equipment and mechanical-property models and scheduling. GRA

N89-22356# Mitre Corp., Bedford, MA
LINK PERFORMANCE DATA MANAGEMENT AND ANALYSIS SYSTEM USERS MANUAL Final Report

GABRIEL R. ELKIN Dec 1988 189 p

(Contract F19628-86-C-0001)

(AD-A203605; MTR-10450, ESD-TR-88-283) Avail NTIS HC A09/MF A01 CSCL 12/7

The Digital European Backbone (DEB) Link Performance Data Management and Analysis System (LMAS) performs reduction and analysis of the data acquired by the DEB Data Collection System (DCS). The data collection by DCS, called Field Data, is stored on magnetic tapes (Field Tapes), and consists of Received Signal Level (RSL) and Deep Fade statistics. LMAS allows several months of Field Data from one side of a link to be merged onto a Summary Tape. Using the Summary Tape database, LMAS provides the capability to plot and report several statistics for a variety of time periods. This paper serves as a guide for users of LMAS software and as a reference on the structure of the database. GRA

N89-22524# South Dakota Univ., Vermillion Human Factors Lab.

MENUNING AND SCROLLING AS ALTERNATIVE INFORMATION MANAGEMENT TECHNIQUES

 Interim Report, Feb. - Aug. 1986

S. S. OSGOOD Feb 1988 92 p

(Contract N66001-85-C-0253)

(AD-A203029, NOSC/TD-1216) Avail NTIS HC A05/MF A01 CSCL 12/5

An experiment was conducted to evaluate menuning and scrolling as alternative information management techniques. A

menu structure (4-3) and three scrolling methods, line by line, half-screen, were tested. Level of goal word familiarity and size of display window were also examined. The task consisted of locating a target goal word with one of the four access methods. A touch tablet was used to interact with the computer system. Members of a single set of 64 words, 32 unfamiliar, served as goal words in all conditions. Performance data were collected from 48 subjects. Each subject received both word familiarity levels. Access method and window size were between-subjects variables. Results of an analysis of variance on mean total task time revealed significant access method, word familiarity, and access method by word familiarity interaction effects. Line-by-line scrolling was fastest, followed by full-screen scrolling, half-screen scrolling, and menuning. Separate analyses of variances were conducted on total task time for familiar and unfamiliar word sets. The fastest condition depended on the familiarity level of the goal word, but not on window size. When the goal words were familiar, menuning was fastest, followed by line-by-line, full screen, and half-screen scrolling. For unfamiliar goal words, line-by-line scrolling was fastest, followed by full-screen scrolling, half-screen scrolling, and menuning. GRA

N89-25773*# Research Inst for Advanced Computer Science, Moffett Field, CA

PERFORMANCE ISSUES IN MANAGEMENT OF THE SPACE STATION INFORMATION SYSTEM

MARJORY J. JOHNSON Sep 1988 22 p Revised

(Contract NCC2-387)

(NASA-CR-185409, NAS 1.26 185409, RIACS-TR-88-22) Avail NTIS HC A03/MF A01 CSCL 05/2

The onboard segment of the Space Station Information System (SSIS), called the Data Management System (DMS), will consist of a Fiber Distributed Data Interface (FDDI) token-ring network. The performance of the DMS in scenarios involving two kinds of network management is analyzed in the first scenario, how the transmission of routine management messages impacts performance of the DMS is examined. In the second scenario techniques for ensuring low latency of real-time control messages in an emergency are examined. Author

N89-26413# Virginia Univ., Charlottesville Dep of Computer Science

IMPLEMENTATION OF A HYPERCUBE DATABASE SYSTEM

Annual Report, Jul. 1988 - Feb. 1989

J. L. FRENCH, S. H. SON, and J. C. FRENCH Mar 1989 31 p

(Contract DA G05-88ER-25063)

(DE89-01047, DOE/ER-25063/1, JVA-527387/CC89/101)

Avail NTIS HC A03/MF A01

At that time the principal investigators had already been working on the development of a database interface that would be appropriate for a hypercube implementation. However, the predominant thrust of that research had been towards developing a semantic data model which has been traditionally viewed as more appropriate for expert and artificial reasoning systems. We realized at that time that such a database implementation would be incomplete unless it also had a full capability for representing and accessing scientific data, by which we commonly mean array data. To support one kind of data without an equivalent capability of supporting all kinds of data would be futile. Still, it required this grant to direct a significant portion of our energies towards the representation of scientific data. In this report, we will concentrate primarily on our efforts to represent array types of data although it can not be entirely separated from our overall goal of representing all types of data in new ways that are particularly appropriate to a parallel processing environment. DOE

N89-26602*# Boeing Aerospace Co., Seattle, WA Advanced Technology Center

NATURAL LANGUAGE PROCESSING AND ADVANCED INFORMATION MANAGEMENT

JAMES E. HOARD In NASA Goddard Space Flight Center, The 1985 Goddard Conference on Space Applications of Artificial

Intelligence p 301-315 Apr. 1989
 Avail: NTIS HC A17/MF A03 CSCL 09/2

Integrating diverse information sources and application software in a principled and general manner will require a very capable advanced information management (AIM) system. In particular, such a system will need a comprehensive addressing scheme to locate the material in its docuverse. It will also need a natural language processing (NLP) system of great sophistication. It seems that the NLP system must serve three functions. First, it provides an natural language interface (NLI) for the users. Second, it serves as the core component that understands and makes use of the real-world interpretations (RWIs) contained in the docuverse. Third, it enables the reasoning specialists (RSs) to arrive at conclusions that can be transformed into procedures that will satisfy the users' requests. The best candidate for an intelligent agent that can satisfactorily make use of RSs and transform documents (TDs) appears to be an object oriented data base (OODB). OODBs have, apparently, an inherent capacity to use the large numbers of RSs and TDs that will be required by an AIM system and an inherent capacity to use them in an effective way. Author

N89-27261# Environmental Protection Agency, Las Vegas, NV Environmental Monitoring Systems Lab.
GEO-EAS (GEOSTATISTICAL ENVIRONMENTAL ASSESSMENT SOFTWARE) USER'S GUIDE
 EVAN J. ENGLUND and ALLEN R. SPARKS (Computer Sciences Corp., Las Vegas, NV.) Sep. 1988 182 p
 (Contract EPA-68-01-7325)
 (PB89-151252; EPA/600/4-88/033A; EPA/SW/DK-89/019A)
 Avail: NTIS HC A09/MF A01 CSCL 13/2

The installation and use of the Geo-EAS (Geostatistical Environmental Assessment Software) software package on an IBM-PC compatible computer system are described. A detailed example is provided showing how to use the software to conduct a geostatistical analysis of a data set. Thirteen Geo-EAS programs are documented. The principal functions of the package are the production of 2-dimensional gnds and contour maps of interpolated (knged) estimates from sample data. Other functions include data preparation, data maps, univariate statistics, scatter plots/linear regression, and variogram computation and model fitting. Extensive use of screen graphics such as maps, histograms, scatter plots and variograms help the user search for patterns, correlations, and problems in a data set. Data maps, contour maps, and scatter plots can be plotted on an HP compatible pen plotter. Individual programs can be run independently; the statistics and graphics routines may prove useful even when a full geostatistical study is not appropriate. GRA

N89-27590# Economic Systems Analysis, Inc., Oak Ridge, TN
TECHNOLOGY MASTER LIST DATA BASE MANAGEMENT SYSTEM, USER'S MANUAL
 JEANNE YATES RIMPO and MARLENE J OWENS Sep 1988 111 p
 (Contract GRI-5088-450-1667)
 (PB89-177802; GRI-88/0249) Avail: NTIS HC A06/MF A01 CSCL 05/2

In order to track the movement of Gas Research Institute (GRI) projects from the drawing-board concept to commercialized product, GRI developed a Master List of these technologies and research applications. An interactive data base management program (titled WIN) was developed to permit manipulation and updating of the Master List data base. The user's manual provides information on using this data base management program, including record management (adding, editing, deleting, and moving records), report generation (selecting, sorting, and printing), and data base maintenance. The system is designed to be used with the dBase III Plus software on IBM or compatible personal computers. Author

N89-27597# Sandia National Labs., Albuquerque, NM. Organic Materials Div.
MANAGEMENT INFORMATION DATABASE SYSTEM

NANCY L. LEISHMAN May 1989 34 p
 (Contract DE-AC04-76DP-00789)
 (DE89-014595; SAND-88-3439) Avail: NTIS HC A03/MF A01

This is a description of a computerized database tool for use by operational management. The Management Information Database System was created to more efficiently maintain the information needed by managers for time and material cost accounting and resource scheduling. Reports produced reflect the current status of assignments and balances of F-orders. DOE

N89-28440# George Washington Univ., Washington, DC
DATA BASE DEVELOPMENT AND RESEARCH AND EDITORIAL SUPPORT Final Report, 17 Apr. 1978 - 30 Jun. 1988

30 Jun. 1988 100 p
 (Contract NASW-3165)
 (NASA-CR-183249; NAS 1.26.183249) Avail: NTIS HC A05/MF A01 CSCL 05/2

The Life Sciences Bibliographic Data Base was created in 1981 and subsequently expanded. A systematic, professional system was developed to collect, organize, and disseminate information about scientific publications resulting from research. The data base consists of bibliographic information and hard copies of all research papers published by Life Sciences-supported investigators. Technical improvements were instituted in the database. To minimize costs, take advantage of advances in personal computer technology, and achieve maximum flexibility and control, the data base was transferred from the JSC computer to personal computers at George Washington University (GWU). GWU also performed a range of related activities such as conducting in-depth searches on a variety of subjects, retrieving scientific literature, preparing presentations, summarizing research progress, answering correspondence requiring reference support, and providing writing and editorial support. Author

N89-28442# Naval Postgraduate School, Monterey, CA.
AN IMPLEMENTATION OF A DATA DEFINITION FACILITY FOR THE GRAPHICS LANGUAGE FOR DATABASE M.S. Thesis

MICHAEL L. WILLIAMSON Dec. 1988 89 p
 (AD-A207380) Avail: NTIS HC A05/MF A01 CSCL 12/5

This research is an implementation of the data definition facility for the Graphics Language for Database (GLAD). GLAD is a graphics-oriented database management system which is primarily concerned with ease of learning and efficiency of use. The system uses an object-relationship approach to data base design. Entities of the database are represented graphically as objects. With this method, users can visualize the schema of the database and can quickly comprehend how the entities relate. Every effort was made to design GLAD so that a new user can quickly learn to create and manipulate a database without the need of a dedicated database administrator. GRA

N89-71121* Computer Sciences Corp., Silver Spring, MD.
THE SOFTWARE ENGINEERING LABORATORY Final Report
 DAVID N. CARD and F. E. MCGARRY (National Aeronautics and Space Administration Goddard Space Flight Center, Greenbelt, MD.) Feb. 1982 122 p Previously announced in IAA as A89-71030
 (Contract NAS5-24300)
 (NASA-CR-183455; NAS 1.26-183455, CSC/TM-82/6033, SEL-81-104) Avail: NTIS

N89-71278* Southwest Research Inst., San Antonio, TX. Dept. of Civil Engineering and Energetic Systems.
ADRS: AUTOMATED DATA REDUCTION SYSTEM Final Report
 D. K. OKELLEY, S. RUNNELS, and J. P. RIEGEL, III 12 May 1988 442 p
 (Contract NAS5-28283; SWRI PROJ. 06-8347-001)
 (NASA-CR-183438, NAS 1.26-183438) Avail: NTIS

N89-71336* Institute for Computer Applications in Science and Engineering, Hampton, VA.

PERFORMANCE OF A DATA BASE MANAGEMENT SYSTEM WITH PARTIALLY LOCKED VIRTUAL BUFFERS

RICHARD S. BRICE (George Washington Univ., Washington, DC.) and STEPHEN W. SHERMAN 27 Feb. 1976 17 p Prepared in cooperation with Houston Univ., TX

(Contract NAS1-14101; NGR-09-010-078)

(NASA-CR-185729; ICASE-76-6; NAS 1.26:185729) Avail: NTIS

STI AND LIBRARIES

Management of scientific and technical information so that it has maximum impact on the R&D process — carried directly to the researcher or channeled through the library — has perplexed those organizations that carry on high technology activities. Conceptually, STI can be considered within IRM, wherever it may fit in the management structure.

A84-44092

INFORMATION RETRIEVAL STRATEGIES IN A FILE-SEARCH ENVIRONMENT

J. ELKERTON and R. C. WILLIGES (Virginia Polytechnic Institute and State University, Blacksburg, VA) Human Factors (ISSN 0018-7208), vol. 26, April 1984, p. 171-184. refs

(Contract N00014-81-K-0143; NR PROJECT SRO-101)

Copyright

The investigation represents an exploration of search strategies in an information-retrieval task. The task environment consisted of five search procedures: scrolling, paging, string search, absolute line movement, and relative line movement. Independent variables included user, task, and editor characteristics. The user variable was previous interactive computing experience (novice or expert). The task variables were file type (data or text), file length (short or long), and target type (embedded, nonembedded, or repeated). The editor variable was window size (1, 7, 13, or 19 lines). The results of the 2 x 2 x 2 x 3 x 4 mixed-factor experiment indicated that subject experience, file length, target type, and window size, as well as an interaction between subject experience and file length, were the salient factors of file search. Large differences in novice and expert search strategies were also discovered. Most importantly, the investigation revealed the need for adaptive interfaces that can alter in response to a user's style. Author

A84-45547* National Aeronautics and Space Administration Langley Research Center, Hampton, VA.

THE FUNCTION OF REPORT COMPONENTS IN THE SCREENING AND READING OF TECHNICAL REPORTS

T. E. PINELLI, V. M. CORDLE (NASA, Langley Research Center, Hampton, VA), and R. F. VONDRAN (Catholic University of America, Washington, DC) Journal of Technical Writing and Communication (ISSN 0047-2816), vol. 14, no. 2, 1984, p. 87-94. refs

Copyright

A reader preference survey of engineers and scientists at the NASA Langley Research Center and in three professional/technical societies was conducted to determine the opinions of report users and producers concerning the format (organization) of NASA technical reports and the usage of technical report components. The survey questionnaire contained fourteen questions covering twelve survey topics. This article reports the findings of two survey topics: the components initially reviewed or read to determine whether to read a report in its entirety and the order in which report components are read. Author

A84-45571*

COST CONSIDERATIONS IN DATABASE SELECTION - A COMPARISON OF DIALOG AND ESA/IRS

R. F. JACK (NASA, University of Kentucky Technology Applications Program, Lexington, KY) Online (ISSN 0146-5422), July 1984, p.

51-54.

(Contract NASW-3367)

Copyright

It is pointed out that there are many factors which affect the decision-making process in determining which databases should be selected for conducting the online search on a given topic. In many cases, however, the major consideration will be related to cost. The present investigation is concerned with a comparison of the costs involved in making use of DIALOG and the European Space Agency's Information Retrieval Service (ESA/IRS). The two services are very comparable in many respects. Attention is given to pricing structure, telecommunications, the number of databases, prints, time requirements, a table listing online costs for DIALOG and ESA/IRS, and differences in mounting databases. It is found that ESA/IRS is competitively priced when compared to DIALOG, and, despite occasionally higher telecommunications costs, may be even more economical to use in some cases. G.R.

A85-24514* National Aeronautics and Space Administration, Washington, DC.

IDiot SHEETS - PREPARING AND USING DATABASE GUIDE SHEETS

R. F. JACK (NASA/University of Kentucky, Technology Applications Program, Lexington, KY) Database (ISSN 0162-4105), vol. 7, Dec. 1984, p. 76-82.

(Contract NASW-3367)

Copyright

In connection with the utilization of databases, problems can arise with respect to the understanding or evaluation of the provided information. Database guide sheets can be an important aid for overcoming these problems. A number of systems are already sufficiently documented by guide sheets, while other systems do not have guide sheets with adequate descriptive information. Details regarding database guide sheets are discussed, taking into account the type of descriptive information provided, the sample online record, and access points and other related functions for searching the database. Attention is given to cases when a guide sheet should be made, details regarding the preparation of such a sheet, the importance of neatness, and important points which should be kept in mind when guide sheets are being prepared. G.R.

A85-24549*

AN INTERMEDIARY'S PERSPECTIVE OF ONLINE DATABASES FOR LOCAL GOVERNMENTS

R. F. JACK (NASA/University of Kentucky, Technology Applications Program, Lexington, KY) IN: National Online Meeting, New York, NY, April 10-12, 1984, Proceedings. Medford, NJ, Learned Information, Inc., 1984, p. 115-123.

(Contract NASW-3367)

Copyright

Numerous public administration studies have indicated that local government agencies for a variety of reasons lack access to comprehensive information resources; furthermore, such entities are often unwilling or unable to share information regarding their own problem-solving innovations. The NASA/University of Kentucky Technology Applications Program devotes a considerable effort to providing scientific and technical information and assistance to local agencies, relying on its access to over 500 distinct online databases offered by 20 hosts. The author presents a subjective assessment, based on his own experiences, of several databases which may prove useful in obtaining information for this particular end-user community. Author

A86-40659* NASA Scientific and Technical Information Facility, Baltimore-Washington International Airport, MD.

'MEATBALL SEARCHING' - THE ADVERSARIAL APPROACH TO ONLINE INFORMATION RETRIEVAL

R. F. JACK (NASA, Scientific and Technical Information Facility, Baltimore, MD) Database (ISSN 0162-4105), vol. 8, Dec. 1985, p. 45-52. refs

(Contract NASW-3367)

Copyright

It is proposed that the different styles of online searching can

be described as either formal (highly precise) or informal with the needs of the client dictating which is most applicable at a particular moment. The background and personality of the searcher also come into play. Particular attention is focused on meatball searching which is a form of online searching characterized by deliberate vagueness. It requires generally comprehensive searches, often on unusual topics and with tight deadlines. It is most likely to occur in search centers serving many different disciplines and levels of client information sophistication. Various information needs are outlined as well as the laws of meatball searching and the adversarial approach. Traits and characteristics important to successful searching include: (1) concept analysis, (2) flexibility of thinking, (3) ability to think in synonyms and (4) anticipation of variant word forms and spellings. K.K.

A87-34522

COMPUTER ARCHITECTURE FOR A SURROGATE FILE TO A VERY LARGE DATA/KNOWLEDGE BASE

P. BRUCE BERRA, SOON MYOUNG CHUNG, and NABIL I. HACHEM (Syracuse University, NY) Computer (ISSN 0018-9162), vol. 20, March 1987, p. 25-32. refs
(Contract F30602-85-C-0008)
Copyright

Techniques are presented for managing a very large data/knowledge base to support multiple inference mechanisms for logic programming. The frequent requirement to resort to indexing on all fields of extensional database (EDB) facts presents a very serious management problem in that the index data may be larger than the EDB itself. This problem becomes even more serious in the case of very large data/knowledge bases (hundreds of gigabytes), because more hardware will be required to process and store the index data. In order to reduce the amount of index data considerably without losing generality, a surrogate file is formed which is a hashing transformation of the facts. Superimposed code words (CDW), concatenated code words (CCW), and transformed inverted lists (TIL) are possible structures for the surrogate file. Since these transformations are quite regular and compact, possible computer architectures are considered for the processing of the surrogate file. The use of associative memory methods, as well as a back-end system under development, are discussed in order to illustrate how nonsequential computer architectures can be used to advantage in solving this problem. Consideration is given to how one might perform relational operations on the surrogate file rather than on the full data.

D.H.

A89-21812* National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.

AUTOMATED CATALOGING AND CHARACTERIZATION OF SPACE-DERIVED DATA

WILLIAM J. CAMPBELL (NASA, Goddard Space Flight Center, Greenbelt, MD), LARRY ROELOFS (Computer Technology Associates, Inc., McLean, VA), and MICHAEL GOLDBERG (Mitre Corp., McLean, VA) (NASA, 1988 Goddard Conference on Space Applications of Artificial Intelligence, Greenbelt, MD, May 24, 1988) Telematics and Informatics (ISSN 0736-5853), vol. 5, no. 3, 1988, p. 279-288. Previously announced in STAR as N88-30354. refs
Copyright

One of the most significant technical issues that NASA must address and resolve is the problem of managing the enormous amounts of scientific and engineering data that will be generated by the next generation of remote sensing systems such as the Hubble Space Telescope (HST) and the Earth Observing System (EOS). The amount of data these sensors are expected to produce will be orders of magnitude greater than NASA has ever experienced. Consequently, new solutions must be developed for managing, accessing, and automatically inputting the data into a database in some expressive fashion that will provide a meaningful understanding and effective utilization of this data in a multidisciplinary environment. Presently, scientific data provided by satellites and other sources are processed, cataloged, and archived according to narrow mission or project-specific requirements with little regard to the semantics of the overall research. Scientists

therefore lack knowledge of or access to potentially valuable data outside their own field. What is needed is an innovative approach that will allow collected data to be automatically cataloged, characterized, and managed in a domain-community. A concept and design approach that employs expert system-based knowledge controllers combined with advanced spatial database systems and graphical data structures is discussed. Author

A89-25618#

TECHNOLOGY ADVANCES FOR INFORMATION ACCESS - PROSPECTS AND IMPACT

ROGER K. SUMMIT (Dialog Information Services, Inc., Palo Alto, CA) AIAA, Aerospace Sciences Meeting, 27th, Reno, NV, Jan 9-12, 1989. 8 p. refs
(AIAA PAPER 89-0849) Copyright

This paper traces the history of online information retrieval, with emphasis on the manner in which technological advances stimulated the development of the online industry in general, and the DIALOG Information Retrieval Service in particular. The current technology employed by Dialog is examined, as are applications of that technology to information searching in the aerospace/defense industry. Continuing progress in online and CDROM (Compact Disk, Read Only Memory) information technology is reviewed, prospects for future development are analyzed, and the impact of that development on the online industry is considered. Author

A89-25619#

DOD INFORMATION ANALYSIS CENTERS - THEIR RESOURCES AND AVAILABILITY

PAUL M. KLINEFELTER (DOD, Defense Technical Information Center, Alexandria, VA) AIAA, Aerospace Sciences Meeting, 27th, Reno, NV, Jan. 9-12, 1989. 12 p.
(AIAA PAPER 89-0850)

From their inception after World War II and particularly since their recognition and official sponsorship by the Department of Defense (DOD) in 1965, information analysis centers have proved their worth as dependable sources of subject expertise in support of DOD research and engineering projects and policies. They provide state-of-the-art answers and evaluated supporting data within their respective areas of subject specialization, complementing the technical document reference and access furnished by libraries and information centers. Author

A89-25620#

HOW AN ENGINEER ACQUIRES AND USES INFORMATION THROUGH THE DIALOG SYSTEM

PAUL ZARCHAN (Charles Stark Draper Laboratory, Inc., Cambridge, MA) AIAA, Aerospace Sciences Meeting, 27th, Reno, NV, Jan 9-12, 1989. 9 p.
(AIAA PAPER 89-0851) Copyright

The use of the DIALOG Information Retrieval Service in the daily work of an aerospace engineer is discussed. Consideration is given to the technical aspects and cost of using the system. The various types of data bases included in the DIALOG system are discussed, focusing on data bases which are useful to engineers. Sample searches using the Aerospace DataBase are presented to illustrate the operation of research oriented data bases. Examples are given for other DIALOG data bases which provide national, international, business, and technological news. Other examples using the DIALOG system include searching resumes when recruiting new employees and obtaining information on the research and business activities of prominent persons. It is concluded that operation of the DIALOG system on a daily basis provides an extensive amount of information pertinent to engineers. R.B.

A89-27235

A LIBRARY COLLECTION OF SOFTWARE DOCUMENTATION SPECIFIC TO ASTRONOMICAL DATA REDUCTION

CAROL RHODES, MICHAEL KURTZ, and JOYCE REY-WATSON (Harvard-Smithsonian Center for Astrophysics, Cambridge, MA) IN: Astronomy from large databases: Scientific objectives and

methodological approaches; Proceedings of the Conference, Garching, Federal Republic of Germany Oct. 12-14, 1987. Garching, Federal Republic of Germany, European Southern Observatory, 1988, p. 459-464.

Copyright

A library collection of software documentation used in astronomical data reduction is being created. In this paper, objectives in establishing this collection are discussed. A list of acquired documentation is presented with brief descriptions of the software and the hardware required. The collection will be cataloged and available for interlibrary loan through the Smithsonian Institution Library. Instructions on accessing this collection are included. The project is summarized, with special consideration given to the future directions of this collection. Author

A89-45650* NASA Scientific and Technical Information Facility, Baltimore-Washington International Airport, MD.

SEARCHING THE PASCAL DATABASE - A USER'S PERSPECTIVE

ROBERT F. JACK (NASA, Scientific and Technical Information Facility, Baltimore, MD) Database (ISSN 0162-4105), vol. 12, Aug. 1989, p. 86-91.

(Contract NASW-4070)

Copyright

The operation of PASCAL, a bibliographic data base covering broad subject areas in science and technology, is discussed. The data base includes information from about 1973 to the present, including topics in engineering, chemistry, physics, earth science, environmental science, biology, psychology, and medicine. Data from 1986 to the present may be searched using DIALOG. The procedures and classification codes for searching PASCAL are presented. Examples of citations retrieved from the data base are given and suggestions are made concerning when to use PASCAL. R.B.

N84-11059# Henderson (Madeline M.), Bethesda, MD.

COMPILATION OF COOPERATIVE DATA ELEMENT DICTIONARY OF FIVE FEDERAL AGENCIES' SYSTEMS FOR PROCESSING OF TECHNICAL REPORT LITERATURE

M. M. HENDERSON 1 Mar. 1983 78 p (AD-A130797; PB83-193771) Avail: NTIS HC A05/MF A01 CSDL 05/2

The data element dictionary project consisted of the compilation of a dictionary encompassing all of the data elements used in the major systems for handling technical reports; the systems involved are those of the Department of Defense Technical Information Center (DTIC), Department of Energy Technical Information Center (DOE/TIC), the National Aeronautics and Space Administration Scientific and Technical Information Facility (NASA/STIF), the National Technical Information Service (NTIS), and the Government Printing Office (GPO). All those elements, both substantive and housekeeping types, used in processing technical reports in each system are included in the compilation; each record contains the element's definition, rules for use, the tags or indicators used internally, and those used externally for information interchange.

Author (GRA)

N84-11061# King Research, Inc., Rockville, MD.

THE USE AND VALUE OF DEFENSE TECHNICAL INFORMATION CENTER PRODUCTS AND SERVICES

N. K. RODERER, D. W. KING, and S. E. BROUARD Jun. 1983 115 p

(AD-A130805) Avail: NTIS HC A06/MF A01 CSDL 05/2

This study describes the use and value of the major information products and services provided by the Defense Technical Information Center (DTIC). The products and services considered include technical report distribution on an on demand-basis and through the Automatic Document Distribution (ADD) program; secondary information dissemination through online searching of the Technical Reports (TR) data base, Current Awareness Bibliographies (CAB), and Technical Abstract Bulletins (TAB); and provision of management information from three management data

banks. The amount and kinds of use of each of these products and services is addressed, as is the value associated with use.

GRA

N84-15836# Oak Ridge Gaseous Diffusion Plant, TN. COMPUTER-OUTPUT MICROFICHE (COM) ON THE OAK RIDGE COMPUTER NETWORK

F. M. OHARA, JR. Aug. 1983 84 p refs (Contract W-7405-ENG-26)

(DE84-002422; K/CSD-INF-83-20) Avail: NTIS HC A05/MF A01

The computer network at the Department of Energy research and production plants in Oak Ridge has the capability of producing computer output microfiche on centralized facilities. Different computers in the network have different ways to access this output capability. These different ways are: the output class, the cataloged procedure PCOM, the utility program LCOM, the MIC file COM, and user written macros. The uses of these different methods are explained and described in this manual, and examples of their use are presented. DOE

N84-23406 Maryland Univ., College Park. STRATEGIES AND MECHANISMS FOR THE DIFFUSION OF SCIENTIFIC AND TECHNICAL INFORMATION: A COMPARATIVE STUDY Ph.D. Thesis

Z. M. P. D. S. FRANCA 1983 174 p

Avail: Univ. Microfilms Order No. DA8402558

Existing strategies and mechanisms for the diffusion of scientific and technical information through an analysis of selected doctoral dissertations are analyzed. The major results of the study were as follows: (1) On the basis of Lewin's three-phase paradigm for planned change, seven types of information strategy were identified: Delivery, Information Network, Adoption-Diffusion, Decision-making, Direct Foreign Investment, Research, Development and Diffusion, and Social Behavioral; (2) A wide variety of mechanisms were noted; (3) Chi-square testing showed that personal mechanisms were significantly more effective than other types of mechanism; (4) A model was constructed which reflected the variation in communication sources and channels as well as the role of social cultural pressures and decision-making functions at all three levels of information dissemination. This model is applied to the communication process between developed nations to end-users in less developed countries. Dissert. Abstr.

N84-25369# Lawrence Livermore National Lab., CA. DISPLAY UNITS FOR ONLINE PASSAGE RETRIEVAL: A COMPARATIVE ANALYSIS

T. R. GIRILL Sep. 1983 24 p refs Presented at the 31st Intern. Tech. Communication Conf., Seattle, 1 May 1984 Submitted for publication

(Contract W-7405-ENG-48)

(DE84-001004; UCRL-89740; CONF-840560-1) Avail: NTIS HC A03/MF A01

Several commercial and governmental computer services now let users retrieve passages online from the full text of books, statutes, or journal articles. The display units in which the text is packaged, however, vary greatly between systems, and these units heavily influence the quality of service. Four reader problems concerning printed books - finding where subjects are discussed, assessing how important each treatment is, linking scattered treatments of the same subject, and exploiting the test's organization - all have standard solutions involving widespread, time tested indexing strategies. All four problems reappear in computerized passage retrieval systems. But, in each case, structural display units (those based on format) prove much less successful than functional display units (based on content) in permitting the traditional solutions to work online too. Hence, functional units consistently support better access to online information than do structural units. DOE

N84-29798# Logistics Management Inst., Washington, DC. LOCAL AUTOMATION MODEL: SYSTEM SPECIFICATION

W. P. HAMILTON, III, R. W. HARTT, and D. J. OCONNOR Mar. 1984 135 p

(Contract MDA903-81-C-0166)
(AD-A141503; LMI-DL401) Avail: NTIS HC A07/MF A01
CSSL 05/2

This document contains a system specification for the Local Automation Model (LAM). The LAM will provide DoD Technical Libraries in the Shared Bibliographic Input Network a local automated information system to improve the management of DoD bibliographic information. The proposed system will replace the existing manual and batch procedures by technical library personnel. The system will provide automated storage of local bibliographic files and access to both local files and the DTIC Technical Reports Data base. Contained in this system specification are a summary of the system characteristics and requirements, a description of the system operating environment (including equipment, software, interfaces, and security) and a discussion of the design details (including general operating procedures, system logic flow, system data, and program descriptions).

Author (GRA)

N84-32277 Illinois Univ., Urbana.
PAGE INDEXING FOR TEXTUAL INFORMATION RETRIEVAL SYSTEMS Ph.D. Thesis

P. A. EMRATH 1983 159 p
Avail: Univ. Microfilms Order No. DA8409916

A number of applications exist for systems which can store and interactively retrieve from very large natural language textual databases. Certain approaches to the design of such systems are discussed. The notion of page indexing is introduced as a scheme for doing information retrieval from natural language full-text databases. The structure of a page indexed database is described and the algorithms needed to do retrieval using the page index are presented. Some characteristics of page indexed text are analyzed and measured in order to estimate the size of the page index, and to show how the size of the index is related to the page size. One of the advantages of the page indexing scheme is the ease with which such a system can be analyzed. This analysis is based on characteristics of the hardware used to implement the system and on characteristics of queries. Finally, three hypothetical systems are proposed and analyzed. These systems range from a microprocessor for a data base of 250 megabytes to a large computer system employing multiple special purpose processors for a database of 50 gigabytes.

Dissert. Abstr.

N84-33283# National Commission on Libraries and Information Science, Washington DC.

A DECADE OF ACCOMPLISHMENT Annual Report, 1980 - 1981

30 Apr. 1982 114 p
(ISSN-0091-2972; AR-10) Avail: NTIS HC A06/MF A01

Accomplishments of the National Commission of Libraries and Information Science during its first ten years are summarized. Major activities of FY-81 include completion of a landmark study to identify the proper roles of the public sector, particularly the Federal government, and the private sector in disseminating information; participation in implementing the Paperwork Reduction Act, and support of the Intermountain Community Learning/Information Center Project.

A R.H.

N85-12780 Indiana Univ., Bloomington.
INFORMATION PROCESSING FOR BETTER UTILIZATION: ASSESSING THE CLER MODEL AS ORGANIZER FOR INNOVATION DIFFUSION AND PLANNED CHANGE INFORMATION REPORTED IN SELECTED STUDIES IN THE ERIC SYSTEM Ph.D. Thesis

G. W. BROWN 1984 440 p
Avail: Univ. Microfilms Order No. DA8417175

The impact on knowledge utilization of a research review organized according to the CLER model of planned change was assessed. An examination of the services performed by eleven available education databases revealed at least two significant obstacles to knowledge use that are subject to amelioration: (1) appropriate information is often difficult to locate, and (2) even

when retrieved, information is often difficult to interpret. The premises undergirding the study were that knowledge utilization would increase if (1) knowledge was processed rather than merely abstracted, (2) the processed knowledge was organized according to a general theory appropriate to an area of specialization, and (3) individual information items were classified according to the general theory. A research review was conducted using 50 innovation diffusion and planned change documents available through the Educational Resources Information Center (ERIC) system. The categories for the review, as well as the descriptive terminology, were derived from the concepts and constructs of the CLER model. The usefulness of such a theoretically-based organization of information was assessed by a panel.

Dissert. Abstr.

N85-12798# Drexel Univ., Philadelphia, PA. Coll. of Information Studies.

EVALUATION OF THE NATIONAL LIBRARY OF MEDICINE'S PROGRAMS IN THE MEDICAL BEHAVIOR SCIENCES. ONLINE SEARCHERS' REACTIONS TO DATABASE AND VENDOR CAPABILITIES IN THE MEDICAL BEHAVIORAL SCIENCES (MBS), STUDY 4 Final Report

M. C. DROTT, K. W. MCCLAIN, B. A. RAPP, V. A. MUSICO, and B. C. GRIFFITH Apr. 1984 20 p refs 6 Vol.
(Contract NO1-LM-23510)

(PB84-230523; NLM-82/302/4) Avail: NTIS HC A03/MF A01; also available in set of 6 reports HC E99 as PB84-230473
CSSL 05/11

This study attempts to gather data which will assist in the design of search capabilities, command structures and new user services for host systems and databases. The source of this data was the record of two focused discussion groups. The comments made by these groups are organized and briefly summarized.

GRA

N85-20938# Lawrence Livermore National Lab., CA. Technology Information System.

POST-PROCESSING OF BIBLIOGRAPHIC CITATIONS FROM DOE/RECON, NASA/RECON, AND DOD/DROLS

W. A. BOLLINGER, V. E. HAMPEL, I. HARRISON, and T. P. MURPHY Aug. 1984 17 p refs Presented at the 8th Intern. Online Inform. Meeting, London, 4-6 Dec. 1984

(Contract W-7405-ENG-48)
(DE85-000617; UCRL-89995-REV-1; CONF-841243-REV-1)
Avail: NTIS HC A03/MF A01

An interactive, self guided program for the joint post processing of bibliographic citations from the federal information centers of the Department of Energy (DOE), the Department of Defense (DOD), and the National Aeronautics and Space Administration (NASA) was developed. Users are individually authorized for automated access to specific information centers, and use standard commands for the downloading, compilation, and online review of citations in a common format. Previously reported post processing capabilities were expanded, permitting: (1) online citation review, categorization, and addition of new data elements; (2) disassembly and reassembly of citations; (3) statistical analysis of data field contents; (4) cross correlation of data field contents; and (5) concordance generation. The new two pass interpreter for the post processing program permits the transformation of abbreviated data field names into English names preferred by each agency, the statistical analysis of the density and completeness of data field in selected sets of bibliographic citations, the elimination of redundant citations, and trend analysis. The latter is a powerful tool for the exploration of time dependent characteristics in a particular field of research, of an organization, or for an author. Graphical displays of publication rates as a function of time and the normalized statistics of terms used in the description of the work, can be used to signal new directions of ongoing research and the intensity of its support.

DOE

N85-22260# Battelle Columbus Labs., OH.
EVALUATION OF THE VOCABULARY SWITCHING SYSTEMS
Final Report, 1 Oct. 1979 - 31 Oct. 1984

R. NIEHOFF and G. MACK Aug. 1984 205 p refs Submitted for publication

(Contract NSF IST-79-11190; NSF IST-81-11497)

(PB85-127157) Avail: NTIS HC A10/MF A02 CSCL 05/2

The Vocabulary Switching System (VSS) is an experimental system designed to enhance search strategies and ultimately retrieval performance for those who use online bibliographic data bases. VSS contains 15 indexing and retrieval vocabularies from 12 different suppliers. By fully integrating these vocabularies into common VSS files the VSS user has access to about 315 thousand possible search terms. VSS assists users with free-text or controlled-vocabulary searches and single or multiple data base searches. This report describes research efforts undertaken to: (1) modify and expand VSS from an earlier more primitive version, and (2) evaluate VSS in end-user and intermediary communities in real-life situations. Author (GRA)

N85-27747 Illinois Univ., Urbana-Champaign.

RETRIEVAL PERFORMANCE IN A FULL TEXT JOURNAL

ARTICLE DATABASE Ph.D. Thesis

C. TENOPIR 1984 264 p

Avail: University Microfilms Order No. DA8502315

It is often assumed that the availability of the full text of journal articles for online searching will make abstracting and indexing obsolete and that search results with full text will be superior to the results of bibliographic searching. These assumptions were tested by comparing results from searching the full text of journal articles in the Harvard Business Review Online database on a commercial search system with the results from searching on the titles and the value-added fields of abstract and controlled vocabulary. There was a significant difference at the .05 level between the full text and other methods for total documents retrieved, recall ratio, and overlap and uniqueness of specific documents retrieved. Full text searching contributed a significantly greater number of documents, had a significantly higher recall, and contributed a significantly higher number of unique documents. Its precision ratio was lower than other search methods. Dissert. Abstr.

N85-27749 Illinois Univ., Urbana-Champaign.

ACCESS PATH OPTIMIZATION FOR NETWORK DATABASE

RETRIEVAL Ph.D. Thesis

H. H. CHEN 1984 116 p

Avail: University Microfilms Order No. DA8502102

In evaluating a query using a network database, the links need to either be followed or be saved. Two new data retrieval methods are presented so that the links are saved in a database relation for later use. The method proposed combine traditional relational and network retrieval methods. In many cases, these new methods show substantial performance improvement in evaluating queries using network databases CK84a. The proposed methods are useful for database retrieval from network databases as well as from relational databases implemented with links CK84b. A high-level query interface is usually provided to translate a user's queries into efficient network queries. The query optimization algorithms for such a system are presented in a stepwise fashion by beginning with finding an optimal access path for a given access tree using the proposed methods as well as the traditional method of database retrieval. Dissert. Abstr.

N85-27750 Illinois Univ., Urbana-Champaign.

DESIGN OF AN INTERFACE TO AN INFORMATION

RETRIEVAL NETWORK Ph.D. Thesis

J. D. MENDOZA 1984 192 p

Avail: University Microfilms Order No. DA8502245

The use of computers for information retrieval has brought about a growth of databases (bibliographic, in particular) as well as an increase in the number of search service centers (SSCs) that make the databases accessible online. This thesis proposes an interface to these SSCs and databases to make the variabilities transparent to the user - an Automatic IRC. The Automatic IRC, aimed to be a full-service information center, provides the following services for the user (1) assistance in the formation of the query,

(2) assistance in the choice of relevant databases and location of SSC(s) that make the database(s) accessible at a low cost; (3) automatic dial-up and log-on to the SSCs and the databases; (4) translation of the user query into a format that can be processed by the SSC retrieval system; (5) post-processing of bibliographic citations from online searches (i.e., sorting, merging, eliminating duplicate citations and finishing the output), and (6) location, ordering and delivery of documents. Dissert. Abstr.

N85-35828# Computer Sciences Corp., Gulf Breeze, FL.

EPALIT: A DATA MANAGEMENT SYSTEM APPLIED TO THE CONTROL AND RETRIEVAL OF TECHNICAL REPORTS

S. M. MEANS 1985 20 p refs

(Contract EPA-68-01-6639-236)

(PB85-193068; EPA-600/D-85-085) Avail: NTIS HC A03/MF A01 CSCL 05/2

The EPALIT data management system is used by the EPA Environmental Research Laboratory, Gulf Breeze, FL, to preserve and manipulate information in text databases. EPALIT provides the logical resources for data organization, analysis, and retrieval. It is completely interactive and permits natural language searching with full or truncated terms, imbedded word fragments, and Boolean search strings. The library has applied this system to the control and dissemination of its information resources. The Contribution Database, consisting of the laboratory's in-house and extramural publications, is the most sophisticated application to date. EPALIT's features are described in the context of this Contribution Database and its various report formats illustrated. GRA

N86-11078# R-K Research and System Design, Malibu, CA.

ANNOTATED BIBLIOGRAPHY OF PUBLICATIONS DEALING WITH OCCUPATIONAL HEALTH AND MEDICAL INFORMATION SYSTEMS, COST ANALYSIS PROCEDURES, EVALUATION METHODOLOGY AND RELATED LEGAL ISSUES

1984 43 p

(Contract N00014-84-C-0601)

(AD-A156650) Avail: NTIS HC A03/MF A01 CSCL 06/10

The purpose of this selective bibliography is to provide a sense of the scope of the literature relevant to the subject matter of interest in this project to test and evaluate the Navy Occupational Health Information Management System (NOHIMS). The intent has been to describe the contents of each reference in sufficient detail so that a decision could be made whether or not to obtain a copy of the complete article. Articles are taken from journals such as The New England Journal of Medicine, Proceedings of the Fifth Annual Symposium on Computer Applications in Medical Care, Journal of Occupational Medicine, Navy Lifeline and Science Topics cover a variety of topics such as liability for personal injuries caused by defective medical computer programs, computers in medical care, mental health information systems, COSTAR, Environmental Health Systems, and Medical surveillance requirements. GRA

N86-12995# Army Cold Regions Research and Engineering Lab., Hanover, NH.

A USER'S GUIDE FOR THE BIBSORT PROGRAM FOR THE IBM-PC PERSONAL COMPUTER

T. KYRIAKAKIS and I. K. ISKANDAR Apr. 1985 66 p

(Contract DA PROJ. 4A1-61102-AT-24)

(AD-A157936; CRREL-SR-85-4) Avail: NTIS HC A04/MF A01 CSCL 09/2

This report is intended to provide the reader with step-by-step instructions on how to use the BIBSORT computer program on the IBM Personal Computer. The program allows storage and retrieval of bibliographic data. The program has been tested on an IBM-XT, using DOS 1.1 or 2.1. The program requires a monitor and a printer. This user's guide discusses how to prepare diskettes to enter the data, how to name categories and files, how to open categories and files, and how to enter data. The guide also shows how to sort and store data, edit, delete, or append the data, and how to obtain a hard copy of the sorted data. Each data diskette can take up to 500 entries, assuming 512 characters per entry. A

section on how to change the program to fit specific needs is presented in Appendix A, and the program listing is in Appendix B. GRA

N86-15211# Defense Technical Information Center, Alexandria, VA.

**INTEGRATED BIBLIOGRAPHIC INFORMATION SYSTEM:
INTEGRATING RESOURCES BY INTEGRATING INFORMATION
TECHNOLOGIES Final Report**

G. A. COTTER and R. W. HARTT May 1985 10 p
(AD-A157700; DTIC/TR-85/8) Avail. NTIS HC A02/MF A01
CSCL 05/2

The Defense Technical Information Center (DTIC) is sponsoring the development of an integrated bibliographic information system. The prototype of this system, under development since April 1983, will be used to demonstrate the concept of an integrated library system combined with an intelligent gateway capable of querying and updating -- simultaneously -- more than one heterogeneous bibliographic data base (catalog). Queries and updates of any data base will be performed using a common command language, relieving the system user of the need to learn and master separate languages and procedures for each data base accessed. The development approach used, the information processing concepts and technologies investigated and selected for implementation in the prototype system, and the issues underpinning system implementation are described. GRA

N86-16155# Pacific Northwest Lab., Richland, WA
**ASSURANCE PROGRAM FOR REMEDIAL ACTION (APRA)
MICROCOMPUTER-OPERATED BIBLIOGRAPHY
MANAGEMENT SYSTEM**

R. D. STENNER, D. K. WASHBURN, and D. H. DENHAM Jun 1985 68 p
(Contract DE-AC06-76RL-01380)
(DE85-008763; PNL-5527) Avail. NTIS HC A04/MF A01

Pacific Northwest Laboratory (PNL) provided technical assistance to the Office of Operational Safety (OOS) in developing their Assurance Program for Remedial Action (APRA) The APRA Bibliography Management System (BMS), a microcomputer-operated system designed to file, locate and retrieve project-specific bibliographic data, was developed to manage the documentation associated with APRA The BMS uses APRABASE, a PNL-developed computer program written in dBASE II language, which is designed to operate using the commercially available dBASE II database software. This document describes the APRABASE computer program, its associated subprograms, and the dBASE II APRA file. A User's Manual is also provided in the document. Although the BMS was designed to manage APRA-associated documents, it could be easily adapted for use in handling bibliographic data associated with any project. DOE

N86-17219# Allied Bendix Corp., Kansas City, MO.
**LABORATORY TECHNICAL INFORMATION SYSTEM:
ANALYSIS PHASE**

L. L. HOLLAND Aug. 1985 29 p
(Contract DE-AC04-76DP-00613)
(DE85-018311, BDX-613-3272) Avail. NTIS HC A03/MF A01

The development of a Technical Information Management System for the Materials Evaluation Laboratory was undertaken to reduce the labor required to determine the flow of work within the laboratory, provide sample tracking, and to make the results of tests available to the requestor more quickly. The analysis phase of this development project is now complete. Structured Analysis and Information Analysis were used to reduce the total life cycle costs for the system. The deliverables produced during the analysis phase include data flow diagrams, process mini-specifications, data flow definitions, data element definitions, dialog definitions, the system record structure with navigational paths, and user implementation requirements. These deliverables comprise the functional system specification. It is easily understood by laboratory personnel, computer scientists, and supervision. The specification is also easily maintained to meet changing laboratory requirements. DOE

N86-18245# Lawrence Livermore National Lab., CA.
**BIBLIOGRAPHIC POST-PROCESSING WITH THE TIS
INTELLIGENT GATEWAY: ANALYTICAL AND
COMMUNICATION CAPABILITIES**

H. D. BURTON Sep. 1985 90 p
(Contract W-7405-ENG-48)
(DE85-018153; UCID-20529) Avail. NTIS HC A05/MF A01

This report demonstrates the capabilities of the process functions of the TIS Intelligent Gateway. These functions support bibliometric analysis of a wide range of commercial and federal databases. Examples are provided of search output from five online search systems. Each set of citations was translated to a common format and then analyzed and reformatted using process. DOE

N86-19002# Logistics Management Inst., Bethesda, MD.
**MICROCOMPUTER-BASED LOCAL AUTOMATION MODEL:
FUNCTIONAL DESCRIPTION**

R. W. HARTT and D. J. OCONNOR Oct. 1985 88 p
(Contract MDA903-85-C-0139)
(AD-A160610; LMI-DL503) Avail. NTIS HC A05/MF A01
CSCL 09/2

The Microcomputer-based Local Automated Model (MicroLAM) project will demonstrate the integration of a local collection management system with access to remote bibliographic data bases. Through an intelligent gateway processor, users of the system will be able to access a local catalog and the Defense Technical Information Center (DTIC) Technical Reports (TR) data base simultaneously. The system will consist of a commercial software package (for local collection management) integrated with a subset of the Lawrence Livermore National Laboratory (LLNL) Technology Information System (an intelligent gateway). The intelligent gateway permits sharing of bibliographic resources between the network of technical libraries and information centers within the Department of Defense (DoD) and the DoD technical information clearinghouse -- DTIC. Contained in this functional description are summary description, detailed characteristics and operating environment of the system, as well as the cost factors and development schedule of the LAM project. GRA

N86-19260# Lawrence Livermore National Lab., CA.
TEXT COMPRESSION USING WORD TOKENIZATION

G. LONG, I. MORRISON, and D. BARNETT 11 Sep. 1985 21 p
(Contract W-7405-ENG-48)
(DE86-000832; UCID-20526) Avail. NTIS HC A03/MF A01

This document describes a text compression scheme, its associated algorithms, and their implementation in the C programming language. The algorithms described only work for textual data. The current code and associated data dictionary are slanted toward general English language text such as technical reports and/or newspaper articles. With minor modifications to the code and by using special purpose dictionaries, the same algorithms could be used to compress special purpose text files such as compiler source listings. We achieve compression ratios of better than fifty percent and the routines are very fast. Typical applications produce significant reduction in data storage space and effectively double the transmission rate of documents between computers. DOE

N86-21431# Defense Technical Information Center, Alexandria, VA.

**THE INTEGRATED BIBLIOGRAPHIC INFORMATION SYSTEM:
RESOURCE SHARING TAILORED FOR LOCAL NEEDS Final
Report**

G. A. COTTER and R. W. HARTT Nov. 1985 11 p Presented at the International Online Meeting, London, England
(AD-A161700; DTIC/TR-85/17) Avail. NTIS HC A03/MF A01
CSCL 05/2

The Defense Technical Information Center (DTIC) is charged with providing information services to the scientific and technical community of the Department of Defense (DOD). These service range from collecting and disseminating bibliographic information to sponsoring and directing research into innovative information

handling technologies. Through this research, DTIC actively seeks ways to promote resource sharing as a means for speeding access to information while reducing the costs of information processing throughout the Defense technical library community. As part of this research, DTIC is sponsoring the development of an Integrated Bibliographic Information System (IBIS). The prototype of this system has been under development since April 1983. It will be used to demonstrate and evaluate the advantages of combining an integrated library system with an intelligent gateway capable of querying and updating -- simultaneously -- heterogeneous bibliographic databases. Queries and updates of databases will be performed using a common command language, relieving the system user of the need to master separate languages and procedures for each database accessed. Users will be able to download and post-process data from external sources. This capability will allow libraries to tailor search results, derived from external sources and a local catalog -- to their patron's needs and deliver a single product in an economical and efficient manner. GRA

N86-21432# Defense Technical Information Center, Alexandria, VA.

THE DOD GATEWAY INFORMATION SYSTEM Final Report
G. A. COTTER Oct. 1985 10 p Presented at the IEEE Conference, Williamsburg, Va.
(AD-A161701; DTIC/TR-85/16) Avail: NTIS HC A02/MF A01 CSCL 05/2

The Defense Technical Information Center (DTIC) is sponsoring development of a DOD Gateway Information System (DGIS) to provide online, streamlined methods for identifying, accessing, searching and analyzing data from heterogeneous databases of interest to the DOD community. Present-day access to information resources (databases) is limited since each database has its own complex access procedure and command language. In addition, results from multiple databases cannot be combined or analyzed easily by the user. The Gateway will provide DOD researchers and managers access to many different databases using a single, simple access procedure. Queries of databases will be performed using a common command language, relieving the system user of the need to learn and master separate languages and procedures for each database accessed. A prototype system is under development at the Lawrence Livermore National Laboratory. The characteristics required in the DGIS and the development approach for designing a prototype system are described. GRA

N86-24558 George Washington Univ., Washington, DC
A DESIGN METHODOLOGY FOR ON-LINE MENU-DRIVEN INFORMATION RETRIEVAL SYSTEMS Ph.D. Thesis
A. K. GHAFARI 1985 239 p
Avail: Univ. Microfilms Order No. DA8526773

Currently, there are thousands of information specialists, each one handling hundreds of queries per year. All information, if it is available for quick retrieval, has to be held in some sort of database as part of an information system. This thesis investigates a methodology for designing on-line menu-driven information retrieval systems that meet requirements for ease of use and quick response. The dissertation characterizes an interactive user interface based on a menu-driven system. The characterization begins by describing the menu-driven interface and goes on to model the basic menu systems. To address some of the more practical issues the design and implementation of HC Online Information System is discussed: an interactive and menu-based information system with quick response time. The design methodology is applied to HC Online using a hierarchical searching keys concept and inverted file techniques. Dissert. Abstr.

N86-25681# Oak Ridge National Lab., TN.
DESCRIPTION OF A TENTATIVE US-USSR COMMON COMMUNICATION FORMAT

N. B. COVE, A. A. BROOKS, S. I. SALAZKINA (State Public Library for Science and Technology, Moscow), V. V. KAPRALOVA, I. M. KHARINA, G. D. MATIUSHIN, M. A. AVEISOV (All-Union Inst. of Scientific and Technical Information, USSR), O. V. ZHUKOVETS,

A. S. BARINOV (State Committee for Science and Technology, Moscow), N. V. TURTANOV et al. Nov. 1985 380 p Prepared in cooperation with Gosudarstvennyy Publichnaya Nauchno-Tekhnicheskaya Biblioteka SSSR, Moscow, Vsesoyuznyy Inst Nauchnoy i Tekhnicheskoy Informatsii, Moscow (USSR), Gosudarstvennyy Komitet So
(Contract DE-AC05-84OP-21400)
(DE86-004676, ORNL/CSD/TM-232) Avail: NTIS HC A17/MF A02

The Soviet-American Research Group for the Development of a Common Communication Format for Exchange of Bibliographic Information has prepared a draft format covering books, industrial catalogs, serials, articles, patents, and technical reports. This draft is intended to provide a possible format for exchange of bibliographic records on magnetic tape. Field definitions (tags, indicators, and subfields) are proposed for 105 bibliographic fields. International Standard ISO-2709 is used for the record structure on magnetic tape. DOE

N86-26026# Air Force Inst. of Tech., Wright-Patterson AFB, OH. School of Engineering.

A CONTEXTUAL POSTPROCESSING EXPERT SYSTEM FOR ENGLISH SENTENCE READING MACHINES M.S. Thesis
D. V. PACIORKOWSKI Dec. 1985 140 p refs
(AD-A163951; AFIT/GE/ENG/85D-31) Avail: NTIS HC A07/MF A01 CSCL 09/2

Knowledge-based programming techniques are used in an expert system to reduce uncertainty for optical character recognition by combining evidence from several diverse knowledge sources cooperating in an hierarchical configuration. The postprocessor development focused on a system for generic text input that is not confined to a fixed vocabulary or particular subject domain. The key element to the system's effectiveness is a spell checking algorithm that is not operationally bounded by an enumerated lexicon or biased by statistical sampling. The postprocessor system is also designed to interface almost any type OCR front-end methodology. GRA

N86-28779# Defense Technical Information Center, Alexandria, VA.

HOW EBENEZER SCROOGE AND PETER DRUCKER ARE HELPING SHAPE DOD'S SCIENTIFIC AND TECHNICAL INFORMATION PROGRAM
R. D. DOUGLAS 1985 5 p
(AD-A165640) Avail: NTIS HC A01/MF A01 CSCL 05/1

This paper is about developing a long range plan for the Defense Technical Information Center (DTIC). That plan, DTIC 2000 - A Corporate Plan for the Future, was published in July 1984. This paper highlights the methodology used to develop the plan. It also outlines an anticipated future information environment in which the Center will operate. Additionally, it displays the long range Scientific and Technical Information Program (STIP) goals which were developed for DTIC in the planning process. Before developing the plan, the group researched many planning and management reference sources. Two of these were particularly helpful in determining the planning methodology used to develop DTIC 2000. One key reference was written by Peter Drucker (Management: Tasks, Responsibilities, Practices), a recognized authority in the field of planning and management. The other key reference was from an unexpected source and author A Christmas Carol by Charles Dickens. Drucker's advice to long range planners closely parallels insights presented by Dickens in his Christmas story. GRA

N86-28792# Institute of Gas Technology, Chicago, IL.
ON-LINE INTERACTIVE DATABASE FOR THE STORAGE AND RAPID INFORMATION RETRIEVAL OF GAS INDUSTRY DATA
J. J. KRUSE, C. D. LANDAHL, and D. L. KLASS 1985 12 p
Presented at the Personal Computer Applications in the Gas Industry Conference, Rosemont, Ill., 15-17 Jul. 1985
(TI86-900895; CONF-8507111-1) Avail: NTIS HC A03/MF A01

GasLine is an on-line interactive database for the storage and rapid information retrieval of archival-type gas industry data. It is

the first database of its kind dedicated to serving the gas industry with archival information. Several years of Gas Abstracts are already on-line and Energy Statistics will be available shortly. One of the features of gasLine is the availability of both textual and numerical data. Overall, a broad scope of information, much of which is not given wide distribution, will be made readily available on gasLine. GasLine will be available via TYMNET telecommunications. Benefits to the gas industry are far-ranging and can have a major impact in the areas of marketing, operations, finance, research, engineering, legal, regulatory, and policy functions. GasLine will be available for direct access by information specialists as well as other end users. Usage of gasLine is expected to result in higher individual productivity and greater efficiency of information and data manipulation and analysis. The best benefits are the combination of retrieval of need information almost instantaneously, and its strategic application. This is the essence of the time value of information which is likened to the time value of money or capital. Author

N86-28797# Office of the Under Secretary of Defense for Research and Engineering, Washington, DC. Research and Laboratory Management.

INFORMATION SERVICES: PROS AND CONS

L. YOUNG / In AGARD The Value of Information as an Integral Part of Aerospace and Defence R and D Programmes 8 p Jan. 1986

Copyright Avail: NTIS HC A05/MF A01

A strong science and technology base is a national necessity in a competitive world, and adequate communication is a prerequisite for it. An individual, be it a policy maker, program manager, a bench scientist or engineer resorts to the information system if he believes it will save him or her time to first consult the written record rather than to undertake a repetitious experiment or investigation. The three components to an effective information service are the sources (those who provide or produce information), the users (those who need the information) and the professional information specialists (those who bind the whole system together). The cooperation toward information exchange of all those connected with research and development must be enlisted in support of the system of which they are a part. Author

N86-28799# King Research, Inc., Rockville, MD.

MEASURING THE VALUE OF INFORMATION AND INFORMATION SYSTEMS, SERVICES AND PRODUCTS

D. W. KING and J. M. GRIFFITHS / In AGARD The Value of Information as an Integral Part of Aerospace and Defence R and D Programmes 15 p Jan. 1986

Copyright Avail: NTIS HC A05/MF A01

An approach for measuring the value of information and information systems, services and products is presented. Results of four research projects that have measured value of recorded information used by professional such as scientists, engineers, managers, etc. are also discussed. Furthermore, data are given on the value of such systems and services as a bibliographic database of international publications, online search systems and libraries. The approach used to measure value includes several perspectives. The first perspective is what users are willing to pay for information in terms of money (if exchanged) and the price paid by users in terms of their time and effort to get and read the information. Once information is read and assimilated, there are many purposes for which it might be used such as in one's work, to educate oneself or others, to satisfy one's curiosity, etc. The consequential value resulting from information use is partially measured by the savings that are derived from information use. Higher order values are how the consequential value affects the user's organization and, in turn, society. Author

N86-30570# Defense Technical Information Center, Alexandria, VA. Office of Information Systems and Technology.

THE DOD GATEWAY INFORMATION SYSTEM: PROTOTYPE EXPERIENCE Final Report

G. A. COTTER Apr. 1986 9 p

(AD-A166200; DTIC/TR-86/6) Avail: NTIS HC A02/MF A01 CSCI 05/2

The Department of Defense (DoD) Research and Engineering community requires rapid, easy access to scientific and technical information relevant to its mission. This information is contained in a multiplicity of databases maintained within the federal and commercial sectors. The DoD Gateway Information System (DGIS) is being developed to provide this community with a modern tool for accessing these databases and extracting information products from them. DGIS is designed to provide the DoD researcher with a single, user-friendly system front-end that can be used to identify, access, interrogate, and post-process information from numerous databases. The DGIS transforms these database and processing resources into a single entity - a virtual database. The Defense Technical Information Center (DTIC) is responsible for managing the design, development, and implementation of DGIS. A prototype version of DGIS is now undergoing test and evaluation. Eight information services have been selected as targets of the prototype gateway. The utility of DGIS will rest on the early acceptance and wide spread participation of users. The design accommodates, transparent to the user, the complexities of accessing, downloading, merging, and processing information from diverse sources. This paper describes DGIS developments and evaluations to date.

GRA

N86-31448# Oak Ridge National Lab., TN. Fusion Energy Library.

INTEGRATED LIBRARY SYSTEM AT ORNL: LION

T. C. LIU Mar. 1986 11 p

(Contract DE-AC05-84OR-21400)

(DE86-008967; DOE/OR-21400/T257) Avail: NTIS HC A03/MF A01

Viewgraphs describing the ORNL minicomputer system LION comprise the report. This library system provides information resources and services to support research and development activities. DOE

N86-33203# Research, Inc., Fairfax, VA.

ANALYSIS OF THE USE OF DEFENSE TECHNICAL INFORMATION CENTER RESOURCES BY RESEARCH AND DEVELOPMENT CENTERS AND LABORATORIES IN THE US ARMY Final Report, Sep. 1984 - Sep. 1985

R. V. HUBBARD and K. F. ZACCARDO 8 Nov. 1985 247 p

(Contract DAAD05-84-C-0189)

(AD-A168441; TR-694) Avail: NTIS HC A11/MF A02 CSCI 05/2

This report describes the methodology, findings, and recommendations of a study of the use of Defense Technical Information Center (DTIC) resources and services by organizations in the Army Research and Development (R&D) Community. The purpose of the study was to investigate Army R&D use of and contribution to DTIC information resources and services, assess the benefits that the availability and use of DTIC resources provides to Army R&D, and develop recommendations for actions the Army might take to use and support DTIC more effectively.

Author (GRA)

N86-33207# Sandia National Labs., Albuquerque, NM.

STATE OF THE ART OF GEOSCIENCE LIBRARIES AND INFORMATION SERVICES

N. J. PRUETT 1986 16 p Presented at the 3rd International Conference on Geoscience Information, Adelaide, Australia, 1 Jun., 1986

(Contract DE-AC04-76DP-00789)

(DE86-011188; SAND-86-1284C; CCONF-8606122-1) Avail: NTIS HC A03/MF A01

Geoscience libraries and geoscience information services are closely related. Both are trying to meet the needs of the geoscientists for information and data. Both are also being affected by many trends: increased availability of personal computers; decreased costs of machine readable storage; increased availability of maps in digital format (Pallatto, 1986); progress in graphic displays and in developing Geographic Information System, (GIS)

(Kelly and Phillips, 1986); development in artificial intelligence; and the availability of new formats (e.g., CD-ROM). Some additional factors are at work at changing the role of libraries: libraries are coming to recognize the impossibility of collecting everything and the validity of Bradford's Law. Unobtrusive studies of library reference services have pointed out that only 50% of the questions are answered correctly. It is clear that the number of databases is increasing although good figures for specifically geoscience databases are not available; lists of numeric database are beginning to appear; evaluative (as opposed to purely descriptive) reviews of available bibliographic databases are beginning to appear; more and more libraries are getting online catalogs. DOE

**N87-11630# Logistics Management Inst., Bethesda, MD.
MICROCOMPUTER-BASED LOCAL AUTOMATION MODEL:
SYSTEM PLANNING GUIDANCE**

R. W. HARTT and D. J. OCONNOR May 1986 24 p
(Contract MDA903-85-C-0139)
(AD-A168136; LMI-DL503; DTIC-TR-86/13) Avail: NTIS HC A03/MF A01 CSCL 05/2

Guidance is provided to Department of Defense libraries and information centers on implementing the microcomputer-based Local Automation Model, an integrated library system that includes intelligent gateway technology to search, download, analyze, merge and output citations from multiple databases. The document draws on the experience gained in implementing the micro-Lam prototype at the Technical Library, Headquarters US Army Training and Doctrine Command (HQ TRADOC) and provides an outline of tasks to be addressed in implementing the system at other installations. Tasks include deciding which functions to automate, determining requirements for peripheral equipment, and analyzing telecommunications and electrical requirements. Cost estimates for the system are also included. GRA

N87-16650# Texas Univ., Austin. Graduate School of Business.

**A STUDY OF ORGANIZATIONAL INFORMATION SEARCH,
ACQUISITION, STORAGE AND RETRIEVAL Final Report, Nov.
1983 - May 1986**

GEORGE P. HUBER Aug. 1986 290 p
(Contract MDA903-83-C-0440; DA PROJ. 2Q1-61102-B-74-F)
(AD-A172063; ARI-RN-86-88) Avail: NTIS HC A13/MF A02 CSCL 05/1

The purpose of the study reported was to determine what is known and is not known about these organizational processes so that potential researchers and research resource providers might be wiser in their choice of research topics to study. Contents. Information Environments. How Organizations Learn. A Communication Framework; The Decision Making Paradigm of Organizational Design; Exploiting Information Technologies to Design More Effective Organizations, The Systems Paradigm in the Development of Organization Theory; Correcting the Record and Suggesting the Future; and Organizational Design: Proposed Theoretical and Empirical Research are presented. GRA

**N87-19923# Logistics Management Inst., Bethesda, MD.
BIBLIOGRAPHIC NETWORKS AND MICROCOMPUTER
APPLICATIONS FOR AEROSPACE AND DEFENSE SCIENTIFIC
AND TECHNICAL INFORMATION**

RICHARD W. HARTT In AGARD The Application of Microcomputers to Aerospace and Defense Scientific and Technical Information Work 16 p Oct. 1986
Copyright Avail: NTIS HC A06/MF A01

Bibliographic networks provide the means for sharing information resources among geographically dispersed libraries. As part of a bibliographic network, a single library can access a wide variety of bibliographic information, participate in shared cataloging, and acquire holdings (purchase or loan). Described here are: (1) the functions and operations of libraries supporting aerospace and defense scientific and technical work; (2) the environment and characteristics of bibliographic networks; and (3) the automated system capabilities required for network participation. A discussion of the use of microcomputers as

cost-effective, yet powerful tools for exploiting bibliographic network resources is included. An automated system being developed for U.S. Department of Defense technical libraries is described. This system integrates local library functions with capabilities for accessing bibliographic network resources, both government and commercial. Author

**N87-21739# Oak Ridge Gaseous Diffusion Plant, TN.
USING BAR CODE TECHNOLOGY TO ENHANCE CLASSIFIED
DOCUMENT ACCOUNTABILITY**

P. J. MOUNTAIN and D. J. WADE 1986 28 p Presented at the 14th Annual Conference of the DOE/Contractors Micrographics and Information Management Association, Pleasanton, Calif., 4 Nov. 1986
(Contract DE-AC05-84OT-21400)
(DE87-000760; K/CSD/INF-86/19P; CONF-8611101-1) Avail: NTIS HC A03/MF A01

This paper describes a system of resources and procedures coordinated to improve a classified document inventorying process. The Bar Code Document Accountability System (BARDAS) was developed to demonstrate the feasibility of improving the management and reporting timeliness of secret document inventories by the accountable custodians. The paper discusses the reasons for the development method, the extensive error-checking, the degree of user-friendliness, and the use of bar code technology in accomplishing these goals. Finally, the reactions of users to the system and future plans for enhancement are discussed. DOE

**N87-26677# American Inst. of Aeronautics and Astronautics,
New York, NY. Technical Information Services.**

**BENEFITS OF SCIENTIFIC AND TECHNICAL INFORMATION
SERVICES FOR AEROSPACE AND DEFENSE**

BARBARA LAWRENCE In Advisory Group for Aerospace Research and Planning and Designing Effective Defence and Related Information Services 4 p Apr. 1987
Copyright Avail: NTIS HC A06/MF A01

The benefits of having an aerospace and defense scientific and technical information service are considered based on an understanding of the literature in the field. The functions of a centralized information center and the nature of the research and development process are discussed. Author

**N87-27551# Defense Technical Information Center, Alexandria,
VA. Office of Information Systems and Technology.**

**DTIC (DEFENSE TECHNICAL INFORMATION CENTER) MODEL
ACTION PLAN FOR INCORPORATING DGIS (DOD GATEWAY
INFORMATION SYSTEM) CAPABILITIES Final Report, Oct.
1985 - May 1986**

ALLAN D. KUHN and RANDY L. BIXBY May 1986 18 p
(AD-A181102; DTIC-TR-87/7) Avail: NTIS HC A03/MF A01 CSCL 05/2

The DOD Gateway Information System (DGIS) is being developed to provide the DOD community with a modern tool to access diverse databases and extract information products from them. The Defense Technical Information Center (DTIC) is responsible for the design, development, and implementation of DGIS. DGIS information processing capabilities are seen as a way of enhancing DTIC information services to its users, providing them with comprehensive results as compared with single database-specific results. A model plan for incorporating DGIS capabilities inhouse DTIC is formulated. A testbed office information flow survey is included. The survey aided as a mechanism to create the model plan, and serves as an example of the steps needed to plan for incorporating DGIS capabilities. GRA

**N88-12420# Defense Technical Information Center, Alexandria,
VA.**

**INFORMATION ANALYSIS CENTERS IN THE DEPARTMENT
OF DEFENSE, REVISION**

M. C. ROTHSCCHILD Jul. 1987 160 p
(AD-A184002; DTIC-TR-87/17-REV) Avail: NTIS HC A08/MF A01 CSCL 05/2

The Department of Defense (DOD) Information Analysis Centers (IACs) have been assisting the research, development, and engineering efforts of the defense community for over forty years by analyzing, repackaging, and disseminating highly technical information in specialized subject areas to a select community. An overview of the IACs is presented, including an analysis of the IAC concept, followed by a brief history of the DOD IACs and an examination of some of the issues of concern to DOD IACs. IACs are not without their problems, nevertheless, they continue to have a significant role in the transfer of scientific and technical information. GRA

N88-13082# Lawrence Livermore National Lab., CA
TOWARDS AUTOMATED CONSULTING: DESIGN FEEDBACK FROM THE PERFORMANCE OF ONLINE DOCUMENTATION
 T. R. GIRILL, C. H. LUK, and S. NORTON Jul. 1987 8 p
 Presented at the 50th Annual Meeting of the American Society for Information Science, Boston, Mass., 4 Oct 1986
 (Contract W-7405-ENG-48)
 (DE87-012243, UCRL-96911, CONF-8610336-1) Avail NTIS HC A02

Usage monitoring of online documentation at a supercomputer center strongly suggests the importance of three strategies in the design of an effective consulting system to deliver full-text answer passages to end users. (1) persistent on-demand printing as well as online viewing make a shared database economically vital, (2) a broad range of subject queries makes retrieval on diverse topics through a single user interface psychologically beneficial to readers, and (3) vocabulary mismatch errors demand an active response to faulty search terms, but not at the cost of increased interface complexity. DOE

N88-16574# Defense Technical Information Center, Alexandria, VA. Office of Information Systems and Technology.
DOD GATEWAY INFORMATION SYSTEM (DGIS) COMMON COMMAND LANGUAGE: PROLOG KNOWLEDGE BASE PROFILE. COMMON COMMAND LANGUAGE REPORT NO. 3
 DUC T. TRAN Oct. 1987 8 p
 (AD-A166150, DTIC/TR-87/23, DTIC-AI-FOUNDATION-SER-5)
 Avail: NTIS HC A02/MF A01 CSDL 05/2

The initial phase of the Common Command Language (CCL) project was prototyped in C language. A test and evaluation of the prototypes showed that much more was needed to handle the wide variety and disparity of native command languages and operating characteristics of the multitude of information systems. PROLOG was chosen as a simple but powerful relational programming language based on the idea of programming in logic. PROLOG additionally fits well with the plan for gradual migration from a structured command language to a natural language. The current phase of the project utilizes Artificial Intelligence techniques of blackboard architecture and knowledge bases. PROLOG is the primary implementation language, coupled with low level system-related support functions written in C. GRA

N88-22822# Defense Technical Information Center, Alexandria, VA. Office of Information Systems and Technology
THE SCIENTIFIC AND TECHNICAL INFORMATION NETWORK (STINET). FOUNDATION FOR EVOLUTION
 GLADYS A. COTTER Sep. 1987 33 p
 (AD-A189750, DTIC/TR-88/5) Avail NTIS HC A03/MF A01 CSDL 05/2

This paper describes advances which are being made in information retrieval systems to assist end-users and information specialists to overcome the critical barriers which make it difficult for them to exploit the power of these systems. Technology which is being applied to allow users to interact with information retrieval systems with greater ease and more successful results is identified. To illustrate this process, the efforts of the U.S. Defense Technical Information Center to develop and implement an integrated, functional, scientific and technical information network are described. This network was purposefully designed to incorporate both end-users and their information management intermediaries in a complementary manner making them resolute partners in the

work and its rewards. The uses of technology modules: artificial intelligence, expert systems, gateways, user friendly interfaces - to overcome user barriers are described. GRA

N88-22823# Aerospace Structures Information and Analysis Center, Wright-Patterson AFB, OH
APPLICATION OF NEW TECHNOLOGIES TO DTIC DOCUMENT PROCESSING Interim Report, Jun. - Aug. 1987
 STEVEN G. HARRIS, R. L. CITERLE, and DAVID F. CAHN Aug 1987 42 p
 (Contract F33615-84-C-3216)
 (AD-A189778, ASIAC-887 1A) Avail NTIS HC A03/MF A01 CSDL 05/2

The use of integrated optical character recognition (OCR) and database management technology to improve DTIC document input processing is examined. Significant near-term improvements in efficiency can be realized using commercially available components fused into an integrated system. An approach and system architecture are defined that will permit a staged implementation of this technology within the framework of the current DTIC workflow. While the emphasis of this report is on reducing labor-intensive manual keystroking operations presently in use, the proposed system provides an open ended approach which will interface easily with both existing and future DTIC operations. An in-depth review of current DTIC document processing was used to guide the definition of the pilot system architecture developed in this study, and the results of that review are presented and discussed. GRA

N88-23686 Naval Ocean Systems Center, San Diego, CA. Special Libraries Association.
TRANSLATIONS OF SCIENTIFIC AND TECHNICAL LITERATURE: A GUIDE TO THEIR LOCATION
 KATHLEEN WRIGHT 1987 32 p
 Avail. Issuing Activity

The purpose of this guide is to assist searchers in the location of English language translations of foreign scientific and technical literature. Strategies for locating an existing translation are given along with guidance for users who do not have access to the major bibliographic tools. Major providers of existing translations are described, and procedures for having a publication translated by a commercial firm or a government agency are suggested. Author

N88-27971# Logistics Management Inst., Bethesda, MD
CAPITALIZING ON EXPERIENCE WITH INTELLIGENCE GATEWAY SOFTWARE Final Report
 CYNTHIA W. SHOCKLEY Jan 1988 139 p
 (Contract MDA903-95-C-0179)
 (AD-A193362, LMI-DL60411, DTIC/TR-88/7) Avail NTIS HC A07/MF A01 CSDL 12/5

The Defense Technical Information Center (DTIC) and National Library of Medicine (NLM) both developed gateway software to help users search, retrieve, and analyze information from different data systems, even when hardware and software incompatibilities exist. DTIC has two gateways: Defense Gateway Information System (DGIS) and Search Menu-Aided Easy Searching Through Relevant Options (Search MAESTRO). NLM also has two: Micro-Chemical Substances Information Network (Micro-CSIN) and Grateful MED. Each has strengths and weaknesses, DTIC and NLM experience with them, along with commercial and academic developments, reveal opportunities for improvements. We recommend that (1) DTIC enhance DGIS to enable all users structure search strategies and select suitable databases, and adapt DGIS so that search terms used for one database can be used in several. Such improvements should enable DTIC to use DGIS to meet all user needs. (2) NLM improve the user-friendliness of Micro-CSIN with online and window prompting techniques and modify Micro-CSIN to incorporate controlled vocabulary terms and names into a search strategy. NLM should decide how to incorporate Micro-CSIN and Grateful MED into ABIDE. (3) DTIC and NLM adopt developments from the commercial and academic sectors such as an object-oriented gateway environment, develop

STI AND LIBRARIES

expert systems to aid in creating more effective search strategies, and consider cooperative funding arrangements for future gateway development. GRA

N88-30462# Defense Technical Information Center, Alexandria, VA,

INFORMATION RETRIEVAL SYSTEMS EVOLVE-ADVANCES FOR EASIER AND MORE SUCCESSFUL USE

GLADYS COTTER In AGARD, Barriers to Information Transfer and Approaches Toward Their Reduction 14 p Mar 1988
Copyright Avail: NTIS HC A06/MF A01

The advances which are being made in information retrieval systems to assist end-users and information specialists to overcome the critical barriers which make it difficult for them to exploit the power of these systems are described. Technology which is being applied to allow users to interact with information retrieval systems with greater ease and more successful results is identified. To illustrate this process, the efforts of the U.S. Defense Technical Information Center to develop and implement an integrated, functional scientific and technical information network are described. This network was purposefully designed to incorporate both end-users and their information management intermediaries in a complementary manner making them resolute partners in the work and its rewards. The uses of technology modules (artificial intelligence, expert systems, gateways, user-friendly interfaces) to overcome user barriers are described.

Author

N89-11620# Northrop Services, Inc., Research Triangle Park, NC, Environmental Sciences.

REFREEE: BIBLIOGRAPHIC DATABASE MANAGER. DOCUMENTATION

SLATE RAYMOND Oct. 1987 72 p

(Contract EPA-68-02-4198)

(PB88-200787; EPA/600/8-87/052A, EPA/SW/DK-88/047A)

Avail: NTIS HC A04/MF A01 CSCL 05/2

The publication is the user's manual for 3.x releases of REFREEE, a general purpose bibliographic database management program for IBM compatible microcomputers. The REFREEE software also is available from NTIS. The manual has two main sections: Quick Tour and Reference Guide; and a glossary, three appendixes, and an index. Quick Tour provides information sufficient to enable a new user to install and experiment with the program. Reference Guide provides detailed information about REFREEE databases, records, and fields, the primary command available to the user, and the most common sources of unexpected program behavior.

Author

N89-14702# Naval Postgraduate School, Monterey, CA
CD-ROM (COMPACT DISC READ ONLY MEMORY) LIBRARY OF THE FUTURE M.S. Thesis

KENNETH P. BUTRYM and HAGOP A. AVEDISSIAN Jun 1988 132 p

(AD-A197943) Avail: NTIS HC A07/MF A01 CSCL 09/5

This thesis examines the feasibility of using the compact disc-read only memory (CD-ROM) as the storage medium for the Department of Defense (DOD) construction contracting. Specifically, the DOD sponsored program, headed by the Naval Facilities Engineering Command (NAVFAC), called Construction Criteria Base (CCB) is evaluated. The program is composed of a compact disc containing government construction criteria including Army, Navy and NASA standards. The test platform used is the specification branch of NAVFAC and its Engineering Field Divisions. The CD-ROM used in conjunction with a microcomputer is compared to the standards libraries of the present which are composed of paper, microfilm and microfiche storage media. The conclusion reached is that the use of the CD-ROM disc in the DOD construction arena is advisable. GRA

N89-14913# Lawrence Livermore National Lab., CA
INTERACTIVE ACCESS TO SCIENTIFIC AND TECHNOLOGICAL FACTUAL DATABASES WORLDWIDE

VIKTOR E. HAMPEL, DAVID P. GRUBB, and AMAL MOULIK Oct

1987 25 p Presented at the Metallurgical Society Fall Meeting Cincinnati, OH, 12-14 Oct 1988

(Contract W-7405-ENG-48)

(DE88-016172, UCRL-97617 CONF-881C30 2) Avail: NTIS HC A03/MF A01

We describe the performance of the Intelligent Gateway Processor (IGP) as a technical and cost effective tool for inter-connectivity among heterogeneous resources on geographically distributed networks. The IGP software has been evaluated by several federal agencies and is now operational on over 100 UNIX-based computers from 14 different vendors in the NATO countries and in the United States. We discuss the IGP capabilities, especially the flexibility and extensibility of the table-driven, interpreter-based system that permits the development of a unified approach to the management of scientific and technological information. This includes the automated interactive access to the large bibliographic databases worldwide, the extraction of relevant sets, compilation into a neutral data exchange format, and trend analysis of emerging technologies by statistical means and time-resolved pattern recognition. The expanding availability of numerical databases in science and engineering now also makes it possible to evaluate the leading Chemical Information Management Systems (CIMS) which provide specialized interfaces to the chemical bibliographies and the nomenclature and structures of substances. DOE

N89-14949# University of Southwestern Louisiana, Lafayette Center for Advanced Computer Studies

OVERVIEW OF THE NASA/RECON EDUCATIONAL RESEARCH AND DEVELOPMENT ACTIVITIES OF THE COMPUTER SCIENCE DEPARTMENTS OF THE UNIVERSITY OF SOUTHWESTERN LOUISIANA AND SOUTHERN UNIVERSITY Final Report, 1 Jul. 1985 - 31 Dec. 1987

WAYNE D. DOMINICK, ed 31 May 1984 11 p Revised

Prepared in cooperation with Southern Univ., Baton Rouge, LA

(Contract NASW-3846, NGT-19-010-900)

(NASA-CR-184509, NAS 1.26 184509, DBMS NASA/RECON 1)

Avail: NTIS HC A03/MF A01 CSCL 05/2

This document presents a brief overview of the scope of activities undertaken by the Computer Science Departments of the University of Southern Louisiana (USL) and Southern University (SU) pursuant to a contract with NASA. Presented are only basic identification data concerning the contract activities since subsequent entries within the Working Paper Series will be oriented specifically toward a detailed development and presentation of plans, methodologies, and results of each contract activity. Also included is a table of contents of the entire USL/DBMS NASA/RECON Working Paper Series. Author

N89-14961# University of Southwestern Louisiana, Lafayette Center for Advanced Computer Studies

AN INNOVATIVE, MULTIDISCIPLINARY EDUCATIONAL PROGRAM IN INTERACTIVE INFORMATION STORAGE AND RETRIEVAL. PRESENTATION VISUALS M.S. Thesis Final Report, 1 Jul. 1985 - 31 Dec. 1987

WAYNE D. DOMINICK, ed and MARY C. GALLAGHER Feb

1985 35 p Prepared in cooperation with Southern Univ., Baton Rouge, LA

(Contract NASW-3846, NGT-19-010-900)

(NASA-CR-184521, NAS 1.26 184521, DBMS NASA/RECON 13)

Avail: NTIS HC A03/MF A01 CSCL 05/2

This Working Paper Series entry represents a collection of presentation visuals associated with the companion report entitled An Innovative, Multidisciplinary Educational Program in Interactive Information Storage and Retrieval, USL/DBMS NASA/RECON Working Paper Series report number DBMS NASA/RECON-12. The project objectives are to develop a set of transportable hands-on data base management courses for science and engineering students to facilitate their utilization of information storage and retrieval programs. Author

N89-15829# National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.

IUE ARCHIVED SPECTRA

EDWARD C. SULLIVAN, RALPH C. BOHLIN, SARA R. HEAP, DONALD K. WEST, and MARION SCHMITZ (Computer Sciences Corp., Silver Spring, MD.) Jun. 1988 25 p
(NASA-TM-100715; REPT-89B0037; NAS 1.15:100715) Avail: NTIS HC A03/MF A01 CSCL 03/1

The International Ultraviolet Explorer (IUE) Satellite has been in continuous operation since January 26, 1978. To date, approximately 65,000 spectra have been stored in an archive at Goddard Space Flight Center in Greenbelt, MD. A number of procedures have been generated to facilitate access to the data in the IUE spectral archive. This document describes the procedures which include on-line quick look of the displays, search of an observation data base for selected observations, and several methods for ordering data from the archive. Author

N89-16301# Mitre Corp., Bedford, MA.

A COMPUTER-BASED SPECIFICATION METHODOLOGY

ROBERT G. MUNCK In NASA, Lyndon B. Johnson Space Center, First International Conference on Ada (R) Programming Language Applications for the NASA Space Station, Volume 1 7 p 1986
Avail: NTIS HC A18/MF A03 CSCL 09/2

Standard practices for creating and using system specifications are inadequate for large, advanced-technology systems. A need exists to break away from paper documents in favor of documents that are stored in computers and which are read and otherwise used with the help of computers. An SADT-based system, running on the proposed Space Station data management network, could be a powerful tool for doing much of the required technical work of the Station, including creating and operating the network itself. Author

N89-16303# Houston Univ., Clear Lake, TX.

DEC ADA INTERFACE TO SCREEN MANAGEMENT GUIDELINES (SMG)

SOMSAK LAOMANACHAREON and ANTHONY A. LEKKOS In NASA, Lyndon B. Johnson Space Center, First International Conference on Ada (R) Programming Language Applications for the NASA Space Station, Volume 1 5 p 1986
Avail: NTIS HC A18/MF A03 CSCL 09/2

DEC's Screen Management Guidelines are the Run-Time Library procedures that perform terminal-independent screen management functions on a VT100-class terminal. These procedures assist users in designing, composing, and keeping track of complex images on a video screen. There are three fundamental elements in the screen management model: the pasteboard, the virtual display, and the virtual keyboard. The pasteboard is like a two-dimensional area on which a user places and manipulates screen displays. The virtual display is a rectangular part of the terminal screen to which a program writes data with procedure calls. The virtual keyboard is a logical structure for input operation associated with a physical keyboard. SMG can be called by all major VAX languages. Through Ada, predefined language Pragmas are used to interface with SMG. These features and elements of SMG are briefly discussed. Author

N89-18758# Colorado Univ., Boulder. Lab. for Atmospheric and Space Physics.

INFORMATION SYSTEMS FOR THE SPACE STATION ERA

G. H. LUDWIG In ESA, Proceedings of the 1988 International Geoscience and Remote Sensing Symposium (IGARSS) '88 on Remote Sensing: Moving Towards the 21st Century, Volume 3 p 1497-1499 Aug. 1988

Copyright Avail: NTIS HC A99/MF A01; ESA Publications Division, ESTEC, Noordwijk, Netherlands, \$120 US or 250 Dutch guilders

Space Station research user requirements are discussed. Users will need more discriminating measurements, require higher data rates, and conduct new kinds of interdisciplinary studies. Widely dispersed collaborators will employ data from multiple instruments in studies of global scale, which will necessitate more investigator involvement in planning, control, and use of their data. A user

environment must be designed to meet these challenges, and the design concepts should include: a distributed, cohesive system architecture; a homogeneous, stable set of user interfaces; structured systems that can, in many respects, be transparent to users; and easy transfer of data among collaborators. Investigators must take an active role in the development of the systems. ESA

N89-20028# Idaho National Engineering Lab., Idaho Falls.

STATUS OF DOE INFORMATION NETWORK MODIFICATIONS

RON FUCHS 1988 6 p Presented at the 10th Annual DOE Low-Level Waste Management Conference, Denver, CO, 30 Aug. 1988

(Contract DE-AC07-76ID-01570)

(DE89-005191; EGG-M-88377; CONF-880839-13) Avail: NTIS HC A02/MF A01

This paper provides an update for conference participants on changes, that have been made, or are taking place, to the Department of Energy's National Information Network. A question and answer period is anticipated. Areas of focus are data acquisition from commercial disposal site operators, improved access methods to DOE Information network, progress on personnel computer interfaces, and availability of end user support. DOE

N89-20677# Unisys Corp., Paoli, PA.

INTEGRATING SYNTAX, SEMANTICS, AND DISCOURSE DARPA (DEFENSE ADVANCED RESEARCH PROJECTS AGENCY) NATURAL LANGUAGE UNDERSTANDING PROGRAM Status Report, 1 Aug. - 31 Oct. 1988

LYNETTE HIRSCHMAN 21 Nov. 1988 3 p

(Contract N00014-85-C-0012; ARPA ORDER 5262)

(AD-A203747) Avail: NTIS HC A01/MF A01 CSCL 05/2

A merged lexicon for all domains has been created. The merged lexicon contains about 2400 distinct root words. A tool for extracting lexical items from a dictionary, given a word list, was used to obtain items from the merged lexicon for the resource management domain. Approximately 47 percent of the vocabulary (or 448 words) in this domain is new. However a large number of these words are proper names of ships and locations, which are relatively trivial to enter. There are about 225 other words, including about 50 verbs. Because there are so few verbs, we expect adding the lexical entries to take only a few days. GRA

N89-20859# General Accounting Office, Washington, DC.

SPACE OPERATIONS: TESTING OF NASA'S TECHNICAL AND MANAGEMENT INFORMATION SYSTEM

Mar. 1988 8 p

(GAO/IMTEC-88-28) Avail: NTIS HC A02/MF A01

The status of the development of the National Aeronautics and Space Administration's Technical and Management Information System (TMIS) is presented. TMIS is intended to support the design, development, and operation of the planned space station. The parameters involved in the development of TMIS are data base management, project management, document management, electronic mail, workstations, hardware, interfaces and networking. It is estimated that initial operating capability (IOC) will be available at all NASA Centers by June 1988. M.G.

N89-2086# Massachusetts Inst. of Tech., Cambridge. Artificial Intelligence Lab.

USING ENGLISH FOR INDEXING AND RETRIEVING

BORIS KATZ Oct. 1988 32 p

(Contract N00014-85-K-0124)

(AD-A202227; AI-M-1096) Avail: NTIS HC A03/MF A01 CSCL 05/7

This paper describes a natural language system START. The system analyzes English text and automatically transforms it into an appropriate representation, the knowledge base, which incorporates the information found in the text. The user gains access to information stored in the knowledge base by querying it in English. The system analyzes the query and decides through a matching process what information in the knowledge base is

relevant to the question. Then it retrieves this information and formulates its response in English. GRA

N89-20869# Defense Applied Information Technology Center, Alexandria, VA. Hypermedia Lab.

THE DOD GATEWAY INFORMATION SYSTEM (DGIS): THE DEVELOPMENT TOWARD ARTIFICIAL INTELLIGENCE AND HYPERMEDIA IN COMMON COMMAND LANGUAGE

ALLAN D. KUHN Dec. 1988 18 p
(AD-A203674; DAITC/TR-88/009; DTIC/TR-89/4) Avail: NTIS HC A03/MF A01 CSDL 05/2

DGIS CCL Development began with C language prototyping to study its feasibility and issues. The study raised the potential of employing Artificial Intelligence, and DGIS CCL is now proceeding on two levels. The first level in incorporating Artificial Intelligence as a means to handle the heterogeneous universe of diverse information systems. This is done with PROLOG, using its logic programming capabilities for structuring knowledge base and blackboard architectures. The knowledge bases contain information about the target system commands and operating characteristics, and about users to establish a more graceful and human response in the human-machine interface. AI-based CCL, still in development, is available to all DGIS users. The second level incorporates the hypermedia capabilities of bit-map systems, to run concurrently with those that are ASCII-dependent. A desktop environment is being developed that includes icon selection, windowing technology, simultaneous query invoking and results display in multiple target systems, and color as an enhancing feature. As a part of the hypermedia application, integration with media peripherals such as CD-ROM databases will also be included.

GRA

N89-21706# Tennessee Univ., Knoxville.

AUTOMATED LIBRARY SYSTEMS AND DOCUMENT TRACKING SYSTEMS: COMMERCIAL SOFTWARE ALTERNATIVES, VOLUME 1

J. T. PHILLIPS and P. M. TARRANT Feb. 1989 138 p
Sponsored in part by Pacific Missile Test Center, Point Mugu, CA
Prepared for Oak Ridge Gaseous Diffusion Plant, TN
(Contract DE-AC05-84OT-21400)
(DE89-007716; K/DSRD-55-VOL-1) Avail: NTIS HC A07/MF A01

Automated Library Systems (ALS) have become complex and powerful applications, and they are increasingly selected as appropriate solutions to the challenge of tracking reports and other documents within organizations. The present ALS prototype at the Pacific Missile Testing Center (PMTIC) at Point Mugu, California, was developed in-house and has been in existence for some time. However, with an expected change in the present computing environment on which the ALS presently resides (UNIVAC 1100), a discussion of the features of potential commercial software alternatives was requested. The purpose of this study was to provide an information base of presently available software systems that are similar in operation or capabilities to the present ALS at PMTIC. A future step will entail review of this data and begin a selection process. Various Automated Library Systems and Automated Records Management Systems were profiled to allow comparison of their features to the present system. A bibliography of selected readings was provided to assist the PMTIC in its initial effort to assess future needs.

DOE

N89-22334*# National Aeronautics and Space Administration, Goddard Space Flight Center, Greenbelt, MD.

SPACE DATA MANAGEMENT AT THE NSSDC (NATIONAL SPACE SCIENCES DATA CENTER): APPLICATIONS FOR DATA COMPRESSION

JAMES L. GREEN In its Proceedings of the Scientific Data Compression Workshop p 85-98 Feb. 1989
Avail: NTIS HC A19/MF A03 CSDL 05/2

The National Space Science Data Center (NSSDC), established in 1966, is the largest archive for processed data from NASA's space and Earth science missions. The NSSDC manages over 120,000 data tapes with over 4,000 data sets. The size of the

digital archive is approximately 6,000 gigabytes with all of this data in its original uncompressed form. By 1995 the NSSDC digital archive is expected to more than quadruple in size reaching over 28,000 gigabytes. The NSSDC digital archive is expected to more than quadruple in size reaching over 28,000 gigabytes. The NSSDC is beginning several thrusts allowing it to better serve the scientific community and keep up with managing the ever increasing volumes of data. These thrusts involve managing larger and larger amounts of information and data online, employing mass storage techniques, and the use of low rate communications networks to move requested data to remote sites in the United States, Europe and Canada. The success of these thrusts, combined with the tremendous volume of data expected to be archived at the NSSDC, clearly indicates that innovative storage and data management solutions must be sought and implemented. Although not presently used, data compression techniques may be a very important tool for managing a large fraction or all of the NSSDC archive in the future. Some future applications would consist of compressing online data in order to have more data readily available, compress requested data that must be moved over low rate ground networks, and compress all the digital data in the NSSDC archive for a cost effective backup that would be used only in the event of a disaster.

Author

N89-22525 Rutgers - The State Univ., New Brunswick, NJ.
TECHNICAL REPORT LITERATURE IN CHEMISTRY AND ENGINEERING: BIBLIOMETRIC AND CONTENT ANALYSIS Ph.D. Thesis

A. RAHMAN KHAN 1988 219 p
Avail: Univ. Microfilms Order No. DA8901096

The external impact of Technical Reports (TRs) in chemistry and engineering, their secondary coverage, referencing patterns and selected physical characteristics were examined. The findings were compared against journal articles (JA) in similar disciplines. Samples for TRs were drawn from NTIS database and samples for JAs were drawn from CASEARCH and COMPENDEX databases. Citation measures were used for establishing the amount of external impact. Degree of secondary coverage TRs was based on amount of references to TRs in CASEARCH and COMPENDEX databases. The referencing pattern was established by reviewing the total number and types of references in the selected sample. Select physical characteristics of these vehicles of communication were also examined. A total of seventeen research hypotheses were proposed. All but three were supported. Findings indicate that: (1) in both these disciplines compared to JAs, the external impact of TRs is extremely low; (2) when TRs or JAs were cited, the references were made usually within one to two years of the issue of the document; and (3) the secondary coverage of chemistry TRs by Chemical Abstracts is low and the coverage of the engineering TRs by Engineering Index is minimal. Other important findings also indicate use patterns of available sources by scientists and the ability to select physical characteristics, as independent variables, to differentiate between document types.

Dissert Abstr.

N89-23370# National Technical Information Service, Springfield, VA.

IDENTIFYING USERS AND HOW TO REACH THEM

JOSEPH F. CAPONIO, FREDERICK L. HAYNES, and A. RAHMAN KHAN In AGARD, The Organisation and Functions of Documentation and Information Centres in Defence and Aerospace Environments 5 p Mar. 1989
Copyright Avail: NTIS HC A06/MF A01

The importance of timely use of scientific and technical information is increasingly being recognized by the developing nations as well as the developed nations. It is recognized that it is not only important to develop a better mouse-trap but also it is equally important to ascertain that there is proper diffusion of such an innovation. Knowledge could lay dormant if it does not reach the end-users when they most need it. An attempt is made to address why this is important and focuses on some of the factors involved in identifying and reaching the end-users.

Author

N89-23374# Defense Applied Information Technology Center, Alexandria, VA.

FOSTERING INTERACTION OF GOVERNMENT, DEFENSE, AND AEROSPACE DATABASES

VIKTOR E HAMPEL In AGARD, The Organisation and Functions of Documentation and Information Centres in Defence and Aerospace Environments 20 p Mar. 1989
Copyright Avail: NTIS HC A06/MF A01

The Department of Defense (DOD) knowledge worker needs rapid access to select information contained in government, defense, and aerospace databases In the United States, information of use to defense and aerospace specialists are contained in multiple government databases as well as in commercial databases Policy and technology strategies are addressed, which are being developed by the Defense Technical Information Center (DTIC) to foster better interaction among government, defense, and aerospace databases. To improve interactions, considerable progress was made by evolving standards in communication protocols, operating systems of computers, database management systems, and command structures, but it is the Defense Gateway technology that permits interconnectivity and interoperability in the interim period This makes it possible to make the growing number of heterogeneous databases available to the defense community in a progressively more unified and automated manner The results of several projects that introduce a high degree of information robotics to Information Resource Management (IRM) with substantial increases in human productivity are described Author

N89-23377# RANA Associates, Santa Clara, CA
MICROFILM AND COMPUTER FULL TEXT OF ARCHIVAL DOCUMENTS

13 Oct 1988 9 p
(Contract N00014-85-C-0653)
(AD-A204055) Avail: NTIS HC A02/MF A01 CSCL 14/4

The development of the computer, and more recently the personal computer, has provided a possible solution to the major logistics problem of the storage and retrieval of archival data An efficient or economical manual solution was precluded by the number of people necessary to support a very large data-base and the main bottleneck has occurred in the retrieval and later refiling of the data of interest. In addition, original documents have a finite lifetime, which is adversely affected each time a document is handled. Microfilm retention of data has provided a partial solution, but does suffer from several serious drawbacks. In general, it has very poor spatial resolution especially when archival information contains diagrams, figures, and photographs in addition to alpha-numeric data. Storage parameters such as heat and humidity, as well as the amount of usage by individuals also affect the lifetime of the microfilm itself A very large microfilm data-base requires the services of information retrieval specialists to provide an efficient library function for users, thereby increasing the overhead The intent of this contract is to develop and demonstrate the archival storage of documents using computer-based imaging techniques and the retrieval of these documents by standard database management software GRA

N89-23380# Los Alamos National Lab, NM
RELEVANCE OF INTERNATIONAL RESEARCH FACILITIES TO INTERNATIONAL STABILITY

LOUIS ROSEN 20 Mar. 1989 14 p Presented at the 4th European Physical Society Seminar on International Research Facilities, Zagreb, Yugoslavia, 17 Mar 1989
(Contract W-7405-ENG-36)
(DE89-009400; LA-UR-89-813, CONF-890388-1) Avail: NTIS HC A03/MF A01

International Facilities have played an important play in expanding and keeping open a dialog between east and west The advent of glasnost has dramatically reduced inhibitions on communications and opened new opportunities for international facilities to facilitate the understanding and appreciation of common goals and common threats. This is accomplished through frank

discussions in which real problems are identified and assessed while fictitious ones are laid to rest DOE

N89-23381# New Mexico Technet, Inc, Albuquerque
TECHNOLOGY TRANSFER REPORT Final Report
15 Jun. 1988 19 p
(Contract DE-FG04-84AL-26034)
(DE89-009044; DOE/AL-26034/T6) Avail: NTIS HC A03/MF A01

For the past year New Mexico Technet, Inc (Technet), has been working with the national laboratories, the universities and private industry to develop ways in which Technet can be used to provide and enhance technology transfer. This final report will track our progress toward creating a technology transfer data base, establishing industry-laboratory pilot projects and identifying other types of assistance Technet can provide industry and state government This report will follow the outline of the Scope of Work set forth in our contract with the Department of Energy. A chronology of progress is included, as well as written documentation of requests Technet has made to the laboratories and meetings Technet staff has held with industries, laboratories and universities. Following our discussion of the work undertaken this year, Technet will provide its conclusions on the strengths and weaknesses of the project, how we feel its mission can be continued, and suggestions the Department of Energy might make to its laboratories in the area of technology transfer through the new tools available in various states, including communications networks and technology foundations, such as Riotech DOE

N89-25771 California Univ., Los Angeles
BIBLIOGRAPHIC COUPLING AMONG SCIENTIFIC PAPERS IN BIOLOGICAL RESEARCH SPECIALTIES Ph.D. Thesis
MARILYN KAYE SLATER 1988 236 p
Avail: Univ. Microfilms Order No. DA8906125

Bibliographic coupling strength among scientific papers was studied as an information variable and evaluated as an indicator of specialties in biology Three specialties were identified from corresponding review articles and were characterized along four facets: systems, conditions, observations, and methods. Papers in each sample were assigned a degree of membership in the specialty depending upon facet representation Specialty samples were used to evaluate two bibliographic coupling measures, author and reference coupling, with regard to: (1) the relation of coupling strength between papers to degree of membership in a specialty, (2) the distribution of coupling strengths among pairs of papers, and (3) the power of each measure to resolve a mixed sample into constituent specialties by cluster analysis Members of specialties generally exhibited higher bibliographic coupling strengths than did non-members, however, the variability in coupling strengths was high for all degrees of membership Distribution of coupling strengths among pairs of papers followed a power law, similar to laws of Lotka and Zipf Author and reference coupling performed well as similarity measures in cluster analyses when combined with group average hierarchical agglomerative clustering Resulting cluster patterns showed good resolution of specialties, but author coupling performed somewhat better than reference coupling as a similarity measure. Dissert Abstr

N89-26780# Naval Postgraduate School, Monterey, CA
A MULTIMEDIA DATABASE MANAGEMENT SYSTEM SUPPORTING CONTENTS SEARCH IN MEDIA DATA Progress Report, Oct. 1988 - Jan. 1989
VINCENT Y LUM and KLAUS MEYER-WEGENER Mar. 1989 33 p
(AD-A207070, NPS52-89-020) Avail: NTIS HC A03/MF A01 CSCL 12/7

It is now feasible to store and manage in computers new types of data like text, images, graphics, and sound recordings It is proposed that database management systems should be extended to organize these new types of data and to enable search based on their contents. Media objects are modeled as attributes of abstract data types The contents are captured in terms of natural language descriptions and are translated by a

STI AND LIBRARIES

parser into predicates for easy matching with query phrases. The implications of this approach are discussed: Data organization for multimedia including contents representation, the dictionary used by the parser to recognize words and assign predicates, rules to use semantic relationships in the query evaluation, and access paths to speed up the search for the descriptions. The result is an architecture for multimedia database management systems that combines the additional components needed with the conventional data management and identifies their ways of interaction. Three types of user interfaces are offered that require different levels of skill. The architecture is modular and allows the integration of more advanced AI techniques once they become available.

GRA

N89-27196# Science Applications International Corp., McLean, VA.

RISK ASSESSMENT OF COMPRESSED NATURAL GAS-FUELED VEHICLE OPERATIONS, PHASE 1 Topical Report, Dec. 1987 - Nov. 1988

DAVID M. FRIEDMAN and LAURA C. ZUBER Feb. 1989 192 p
(Contract GRI-5087-254-1621)
(PB89-188841; GRI-89/0037) Avail: NTIS HC A09/MF A01
CSCL 13/6

The Gas Research Institute has embarked on a technology and safety oriented program with the objective of developing a cost-effective, advanced natural gas engine, a compression station, and storage systems that will capitalize on the economic and environmental benefits of using natural gas in vehicular applications. As the first step in a two phase project, a program was initiated to develop a remotely accessible and publicly available, international data base of natural gas vehicle (NGV) safety information. Its purpose is to improve GRI's ability to conduct detailed, quantitative risk assessments of NGVs and NGV systems. In addition to bibliographic reference, scientific data are currently available in a computerized, menu-driven data base management system (DBMS). Data reflect current, domestic, and international knowledge of NGV safety, fire, and injury statistics, refueling station equipment design, and applicable codes and standards. Additional data required for a probabilistic risk assessment include topics such as vehicle component failure modes, strength of materials, natural gas physical properties, and general transportation safety statistics.

Author

N84-74126# Georgia Inst of Tech, Atlanta. School of Information and Computer Science.

NATIONAL STI (SCIENTIFIC AND TECHNICAL INFORMATION) SYSTEM OF EGYPT: IMPLEMENTATION

V. SLAMENKA Nov. 1981 74 p refs
(Contract NSF INT-79-24187)
(PB84-161777; NSF/INT-81003)

N84-75065# Defense Technical Information Center, Alexandria, VA.

THE SHARED BIBLIOGRAPHIC INPUT NETWORK (SBIN): A SUMMARY OF THE EXPERIMENT

G. A. COTTER May 1980 22 p
(AD-A133001, DTIC/TR-83/5)

N86-72104# Office of the Under Secretary of Defense for Research and Engineering, Washington, DC.

CENTERS FOR ANALYSIS OF SCIENTIFIC AND TECHNICAL INFORMATION REGULATION

Jan. 1985 15 p
(PB86-174315; DOD-3200.12-R-2)

N88-70731 Department of Energy/Contractors Micrographics and Information Management Association, Washington, DC.

PROCEEDINGS OF THE 14TH ANNUAL CONFERENCE OF THE DEPARTMENT OF ENERGY/CONTRACTORS MICROGRAPHICS AND INFORMATION MANAGEMENT ASSOCIATION

1986 228 p Conference held in Los Alamos, Tenn., 4-7 Nov. 1986
(DE88-000230; CONF-8611101) Avail: NTIS

N89-70333*# National Aeronautics and Space Administration, Washington, DC.

NASA SCIENTIFIC AND TECHNICAL INFORMATION SYSTEM STUDY

RICHARD M. BURR 1978 76 p
Avail: NTIS

SYSTEMS SECURITY

In a time when we are doing our best to use the systems made available to us, we also have to protect our computers and networks against hostile access by those wanting to plant viruses, or lift, scramble, or destroy data.

A85-42593

SECURITY IMPLICATIONS OF THE SPACE STATION INFORMATION SYSTEM

R. W. BURNS (ORI, Inc., Rockville, MD) IN: Protecting intellectual property in space; Proceedings of the Aerospace Computer Security Conference, McLean, VA, March 20, 1985. New York, IEEE, 1985, p. 3-10 refs

Copyright

The present paper concentrates on aspects of the Space Station itself, all Space Station Program Elements (SSPE) that interact with the Space Station, and the telecommunications of the Space Station to the ground system through NASA's Tracking and Data Relay Satellite System (TDRSS). It is pointed out that one of the major concerns of potential commercial customers of the Space Station is NASA's ability to assure data privacy. A Space Station Information System (SSIS) overview is provided, and the types of user data are examined. Security implications are discussed, taking into account the SSIS environment, the protection of the physical assets of the SSIS, personnel security, computer hardware, computer software, procedural (operational) security, communications security, emanation security, and education and training regarding the security implications of the SSIS.

G.R.

A85-42594*# National Aeronautics and Space Administration, Washington, DC.

SPACE SHUTTLE SECURITY POLICIES AND PROGRAMS

E. L. KEITH (NASA, Shuttle Operations Div., Washington, DC) IN: Protecting intellectual property in space; Proceedings of the Aerospace Computer Security Conference, McLean, VA, March 20, 1985. New York, IEEE, 1985, p. 11-20. refs

The Space Shuttle vehicle consists of the orbiter, external tank, and two solid rocket boosters. In dealing with security two major protective categories are considered, taking into account resource protection and information protection. A review is provided of four basic programs which have to be satisfied. Aspects of science and technology transfer are discussed. The restrictions for the transfer of science and technology information are covered under various NASA Management Instructions (NMI's). There were two major events which influenced the protection of sensitive and private information on the Space Shuttle program. The first event was a manned space flight accident, while the second was the enactment of a congressional bill to establish the rights of privacy. Attention is also given to national resource protection and national defense classified operations.

G.R.

A85-42595

POTENTIAL USES OF PROBABILISTIC RISK ASSESSMENT TECHNIQUES FOR SPACE STATION DEVELOPMENT

S. Z. BRUSKE, R. E. WRIGHT (EG&G Idaho, Inc., Idaho Falls, ID), and W. D. GEASLEN (EG&G Space Systems, Titusville, FL)

IN: Protecting intellectual property in space; Proceedings of the Aerospace Computer Security Conference, McLean, VA, March 20, 1985. New York, IEEE, 1985, p. 21-29. refs
(Contract DE-AC07-76ID-01570)

Copyright

It is pointed out that Probabilistic Risk Assessment (PRA) is a methodology used effectively in the nuclear power industry to determine the risk to the general public from the operation of nuclear power plants. Details regarding the application of PRA in the nuclear industry are illustrated with the aid of a simplified example. The various steps in the risk assessment process are discussed, taking into account the determination of the initiating events, aspects of event tree development, the fault tree, component failure data bases, and consequence determination. Questions regarding the application of the PRA methodology to space station computer security are also explored, giving attention to a hypothetical example to demonstrate the methodology. The purpose of the Initiating Event Logic Diagram (IELD) is to identify the threats to the space station computer security in a structured, logical manner. The Space Station Computer Security Function Event Tree is also developed. G.R.

A85-42596

KEY CONSIDERATIONS IN CONTINGENCY PLANNING FOR SECURE SPACE FLIGHT GROUND CONTROL CENTERS

J. E. SUMMERTON (Booz, Allen and Hamilton, Inc., Bethesda, MD) IN: Protecting intellectual property in space; Proceedings of the Aerospace Computer Security Conference, McLean, VA, March 20, 1985. New York, IEEE, 1985, p. 31-38.

Copyright

The present paper is concerned with contingency planning considerations which address the operational, security, and cost issues of protecting sensitive data during an emergency relocation of protected spacecraft ground systems. Attention is given to the assignment of priorities, backup facility design, a structure for information security, security and backup site readiness, transition to the backup facility, and budgetary considerations. In connection with the latter considerations, questions of loss expectancy are discussed along with the management of the security risk, ground station outages, and the contingency budget baseline. G.R.

A85-42597

A SYSTEMATIC METHOD FOR EVALUATING SECURITY REQUIREMENTS COMPLIANCE

N. W. TYRA and P. A. MILES (ORI, Inc., Rockville, MD) IN: Protecting intellectual property in space; Proceedings of the Aerospace Computer Security Conference, McLean, VA, March 20, 1985. New York, IEEE, 1985, p. 39-47.

Copyright

This paper introduces the Security Compliance Analysis Model (SCAM) as a tool for evaluating the degree of security requirement satisfaction. The model provides a means for compiling independently derived compliance evaluations over the broad spectrum of security issues, Comsec, Opsec, Tempest and Red/Black, ADPE Security, Physical Security, Information Security, Industrial Security, and System Security Areas. The model relates these broad security issues to their constituent parameters (partitioning, shielding, isolation, separation, etc.) via a hierarchical tree structure. Also provided is a means for assigning relational weighting factors which signify the parameter's relative significance to the overall security category. Finally, the model interprets compliance factors and proceeds through a mathematical algorithm to generate a series of scoring values which may be graphed over time. Author:

A85-42598

SECURITY ENGINEERING OF SECURE GROUND STATIONS

L. BICKNER (Booz, Allen and Hamilton, Inc., Bethesda, MD) IN: Protecting intellectual property in space; Proceedings of the Aerospace Computer Security Conference, McLean, VA, March 20, 1985. New York, IEEE, 1985, p. 49-54.

Copyright

This paper describes the techniques and methodologies of

security engineering as applied to the development of ground stations that support spaceflight operations. The integration of traditional security disciplines into an overall systems engineering approach is described. The issues of securability, relative security, and cost versus security are discussed with practical examples. This paper concludes by presenting a security engineering development program model which highlights the costs and associated benefits of a fully integrated security engineering methodology and suggests ways in which this methodology may be applied to the development of future ground stations. Author

A85-42600* Computer Sciences Corp., Falls Church, VA.

RESTRICTED ACCESS PROCESSOR - AN APPLICATION OF COMPUTER SECURITY TECHNOLOGY

E. M. MCMAHON (Computer Sciences Corp., Systems Div., Falls Church, VA) IN: Protecting intellectual property in space; Proceedings of the Aerospace Computer Security Conference, McLean, VA, March 20, 1985. New York, IEEE, 1985, p. 71-73. (Contract NAS5-27351)

Copyright

This paper describes a security guard device that is currently being developed by Computer Sciences Corporation (CSC). The methods used to provide assurance that the system meets its security requirements include the system architecture, a system security evaluation, and the application of formal and informal verification techniques. The combination of state-of-the-art technology and the incorporation of new verification procedures results in a demonstration of the feasibility of computer security technology for operational applications. Author

A87-18852

AEROSPACE COMPUTER SECURITY CONFERENCE, 2ND, MCLEAN, VA, DECEMBER 2-4, 1986, TECHNICAL PAPERS

Conference sponsored by AIAA, American Society for Industrial Security, and DOD Computer Institute. New York, American Institute of Aeronautics and Astronautics, 1986, 142 p. For individual items see A87-18853 to A87-18865.

Copyright

Papers are presented on a model for the containment of computer viruses, the Commercial Communications Security Endorsement Program, and a design for a multilevel secure database management system. Topics discussed include secure computer systems, electronic mail privacy enhancement, multilevel data storage design, and secure database management system architectural analysis. Particular attention is given to access control and privacy in large distributed systems and the verification of integrity. I.F.

A87-18853#

A MODEL FOR THE CONTAINMENT OF COMPUTER VIRUSES

M. M. POZZO and T. E. GRAY (California, University, Los Angeles) IN: Aerospace Computer Security Conference, 2nd, McLean, VA, December 2-4, 1986, Technical Papers. New York, American Institute of Aeronautics and Astronautics, 1986, p. 11-18.

Research supported by the IBM Corp. refs

(Contract NSF MCS-81-21696)

(AIAA PAPER 86-2759) Copyright

This paper presents a mechanism for containing the spread of computer viruses by detecting at run-time whether or not an executable has been modified since its installation. The detection strategy uses an encrypted signature block approach and is held to be better for virus containment than conventional computer security mechanisms which are based on the incorrect assumption that preventing modification of executables by unauthorized users is sufficient. Although this mechanism is most effective when all executables in the system are signed, a scheme is presented that shows the usefulness of the signature block approach when this is not the case. Author

A87-18854#

INTEGRITY MECHANISMS IN A SECURE UNIX - GOULD UTX/32S

G. MILLER, S. SUTTON, M. MATTHEWS, J. YIP, and T. THOMAS

(Gould, Inc., Computer Systems Div., Urbana, IL) IN: Aerospace Computer Security Conference, 2nd, McLean, VA, December 2-4, 1986, Technical Papers. New York, American Institute of Aeronautics and Astronautics, 1986, p. 19-26. refs (AIAA PAPER 86-2761) Copyright

This paper examines an approach taken in designing a secure version of the UNIX operating system. This approach involves superimposing domains upon the UNIX file system, the addition of features that enable easy use of domains, and the enhancement of the integrity mechanisms that are already part of the UNIX operating system. Author

A87-18855#

A PRACTICAL DESIGN FOR A MULTILEVEL SECURE DATABASE MANAGEMENT SYSTEM

B. B. DILLAWAY and J. T. HAIGH (Honeywell Secure Computing Technology Center, Saint Anthony, MN) IN: Aerospace Computer Security Conference, 2nd, McLean, VA, December 2-4, 1986, Technical Papers. New York, American Institute of Aeronautics and Astronautics, 1986, p. 44-57. refs (Contract F30602-86-C-0003) (AIAA PAPER 86-2771) Copyright

The problems inherent in the design of secure database management systems are described. Past attempts at solving these problems are reviewed briefly, and a new approach is described. It is based on the SAT type enforcement mechanism and two extensions to the basic SAT security policy. Author

A87-18856#

MULTILEVEL DATA STORE DESIGN

C. E. GARVEY and P. N. PAPACCIO (TRW, Inc., TRW Defense Systems Group, Redondo Beach, CA) IN: Aerospace Computer Security Conference, 2nd, McLean, VA, December 2-4, 1986, Technical Papers. New York, American Institute of Aeronautics and Astronautics, 1986, p. 58-64. refs (AIAA PAPER 86-2772) Copyright

The design and security model for the Multilevel Data Store (MLDS), which is based on a reference monitor approach, are proposed. The MLDS security model describes the protection that MLDS provides and defines the security rules it is required to enforce; the model is derived from the functional and security requirements of the Database Management System (DBMS). The trusted access methods of the DBMS, the untrusted user processes, the user log on steps, and the transaction and storage procedures are described. The database machine is utilized for the implementation of the MLDS. Consideration is also given to the row labels of the MLDS and the use of the high water-mark model for MLDS. I.F.

A87-18857#

SECURE DATABASE MANAGEMENT SYSTEM ARCHITECTURAL ANALYSIS

T. H. HINKE (System Development Corp., Santa Monica, CA) IN: Aerospace Computer Security Conference, 2nd, McLean, VA, December 2-4, 1986, Technical Papers. New York, American Institute of Aeronautics and Astronautics, 1986, p. 65-72. refs (Contract F30602-82-C-0093) (AIAA PAPER 86-2773) Copyright

This paper is concerned with hardware/software architectures for secure database management systems (SDBMSs). Its specific focus is SDBMSs architectures that can support reference monitor security. It will look at the advantages and disadvantages of various types of proposed SDBMS architectures and the security technology needed to support them. It will then consider the implications of security requirements on various architectural approaches. Author

A87-18858#

GOOD SECURITY PRACTICES FOR I/S NETWORKS

L. W. MEHRMANN (IBM Corp., Irving, TX) IN: Aerospace Computer Security Conference, 2nd, McLean, VA, December 2-4, 1986, Technical Papers. New York, American Institute of

Aeronautics and Astronautics, 1986, p. 73-79.

(AIAA PAPER 86-2775) Copyright

Concepts for identifying and limiting security risks in information systems (I/O) networks are studied. The basic objectives of a good security program and network security are described. Network security risk and controls in an I/O environment are examined from a managerial perspective. The roles of physical access, logical access, organizational, personnel, operational, application development, and work station controls, and data transmission protection in the I/O environment are discussed; the operations of these controls in a specific network environment are considered. I.F.

A87-18860#

STRAWMAN DEFINITION FOR THE SPACE STATION INFORMATION SYSTEM NETWORK SECURITY

A. WHITE (Intermetrics, Inc., Huntington Beach, CA) IN: Aerospace Computer Security Conference, 2nd, McLean, VA, December 2-4, 1986, Technical Papers. New York, American Institute of Aeronautics and Astronautics, 1986, p. 86-94. refs (AIAA PAPER 86-2780) Copyright

The 'Strawman Definition for the Space Station Information System Network Security' provides an initial look at the security measures proposed for the Space Station Program. The paper analyzes security issues facing the design of the Space Station. A network security model for the Space Station Information System is introduced and security objectives are established. Recommendations for Space Station security are proposed to protect NASA and its customers. The paper serves as a baseline for further discussion. Author

A87-18361*# National Aeronautics and Space Administration. Ames Research Center, Moffett Field, CA.

ACCESS CONTROL AND PRIVACY IN LARGE DISTRIBUTED SYSTEMS

B. M. LEINER and M. BISHOP (NASA, Ames Research Center, Moffett Field, CA) IN: Aerospace Computer Security Conference, 2nd, McLean, VA, December 2-4, 1986, Technical Papers. New York, American Institute of Aeronautics and Astronautics, 1986, p. 95-98. Previously announced in STAR as N86-29568. (Contract NCC2-387) (AIAA PAPER 86-2781) Copyright

Large scale distributed systems consists of workstations, mainframe computers, supercomputers and other types of servers, all connected by a computer network. These systems are being used in a variety of applications including the support of collaborative scientific research. In such an environment, issues of access control and privacy arise. Access control is required for several reasons, including the protection of sensitive resources and cost control. Privacy is also required for similar reasons, including the protection of a researcher's proprietary results. A possible architecture for integrating available computer and communications security technologies into a system that meet these requirements is described. This architecture is meant as a starting point for discussion, rather than the final answer. Author

A87-18863#

COMPUTER SECURITY ACQUISITION MANAGEMENT

H. O. LUBBES and B. STAUFFER IN: Aerospace Computer Security Conference, 2nd, McLean, VA, December 2-4, 1986, Technical Papers. New York, American Institute of Aeronautics and Astronautics, 1986, p. 114-119. (AIAA PAPER 86-2774) Copyright

Implementing computer security into the procurement of a Mission Critical System (MCS) is a life cycle process. The process begins with the definition of security requirements during Concept Exploration and continues through deployment to Accreditation of the installation. Throughout, the project manager is faced with technical trade-off decisions, financial issues and perhaps changing functional requirements. This paper presents a consistent life cycle view of the computer security management functions involved in acquisition of MCS. Author

A87-18864#

STATE-OF-THE-ART IN COMPUTER SECURITY FOR DOD SPACE SYSTEMS

D. B. BAKER (Aerospace Corp., Los Angeles, CA) IN: Aerospace Computer Security Conference, 2nd, McLean, VA, December 2-4, 1986, Technical Papers. New York, American Institute of Aeronautics and Astronautics, 1986, p. 120-125. refs (AIAA PAPER 86-2778) Copyright

Because of priorities and constraints which must be considered in performing design trade studies, DoD space systems being fielded today often cannot take full advantage of the computer security technology evolving in the commercial marketplace for multilevel processing. The consolidated Space Operations Center is described as an example of current defense space system development, and its security design is examined relative to the state-of-the-art in trusted system development. A transition strategy to exploit multilevel processing technology is proposed. Author

A87-18865#

COMPUTER SECURITY AND USER AUTHENTICATION - OLD PROBLEMS, NEW SOLUTIONS

J.-C. SPENDER (Enigma Logic, Inc., Concord, CA) IN: Aerospace Computer Security Conference, 2nd, McLean, VA, December 2-4, 1986, Technical Papers. New York, American Institute of Aeronautics and Astronautics, 1986, p. 126-132. (AIAA PAPER 86-2760) Copyright

This paper discusses the use of hand-held authentication devices. The devices offer a new solution to the old problem of securely identifying computer users. The technology has two parts; the authentication device or 'key', and the software or firmware 'lock' that teaches a system to look for the key. The alternative lock and key interactions are explained. Some of the problems presented by the technology, designing keys, designing locks, managing the lock, finding where to locate the lock in the host system, and managing the population of keys, are addressed. User and organizational reactions to this technology, are discussed. Author

A88-22566#

EDUCATIONAL USES OF THE AEROSPACE DATABASE

BARBARA LAWRENCE (AIAA, New York) AIAA, Aerospace Sciences Meeting, 26th, Reno, NV, Jan. 11-14, 1988. 12 p. refs (AIAA PAPER 88-0749) Copyright

The underutilization of the aerospace literature and its importance in maintaining the competitiveness of the aerospace engineer and the industry is discussed. Use of the computerized Aerospace Database to support the engineering educator, the educational process, and the student is described. This paper discusses use of the Aerospace Database, a comprehensive information resource, to train students in literature value and computerized information retrieval. The AIAA/TIS program to help educators incorporate these concepts into their courses and various computerized aids for database searching are described. Author

A88-26209

APPLYING TECHNOLOGY TO SYSTEMS; AEROSPACE COMPUTER SECURITY CONFERENCE, 3RD, ORLANDO, FL, DEC. 7-11, 1987, TECHNICAL PAPERS

Conference sponsored by AIAA, American Society for Industrial Security, and IEEE. Washington, DC, American Institute of Aeronautics and Astronautics, 1987, 170 p. For individual items see A88-26210 to A88-26213 Copyright

The present conference discusses the Secure Distributed Operating System project for the verification of hookup security, active vs. passive security models, an expert system for the classification and sanitizing of texts, developments in guidance for trusted computer networks, the interconnection of accredited systems, and engineering systems applicable to embedded multilevel secure operations. Also discussed are network covert channel analysis, NASA Space Station program threat and vulnerability analysis, criterion extension for distributed systems, a

transport encapsulation security protocol, and the protection of sensitive systems and data in an open governmental agency. O.C.

A88-26210*# National Aeronautics and Space Administration. John F. Kennedy Space Center, Cocoa Beach, FL.

SPACE STATION PROGRAM THREAT AND VULNERABILITY ANALYSIS

STEVEN D. VAN METER (NASA, Kennedy Space Center, Cocoa Beach, FL) and JOHN D. VEATCH (Science Applications International Corp., Safeguards and Security Div., McLean, VA) IN: Applying technology to systems; Aerospace Computer Security Conference, 3rd, Orlando, FL, Dec. 7-11, 1987, Technical Papers. Washington, DC, American Institute of Aeronautics and Astronautics, 1987, p. 104-107. (AIAA PAPER 87-3082) Copyright

An examination has been made of the physical security of the Space Station Program at the Kennedy Space Center in a peacetime environment, in order to furnish facility personnel with threat/vulnerability information. A risk-management approach is used to prioritize threat-target combinations that are characterized in terms of 'insiders' and 'outsiders'. Potential targets were identified and analyzed with a view to their attractiveness to an adversary, as well as to the consequentiality of the resulting damage. O.C.

A88-26212*# National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.

THE HACK ATTACK - INCREASING COMPUTER SYSTEM AWARENESS OF VULNERABILITY THREATS

JOHN QUANN (NASA, Goddard Space Flight Center, Greenbelt, MD) and PETER BELFORD (NYMA, Inc., Greenbelt, MD) IN: Applying technology to systems; Aerospace Computer Security Conference, 3rd, Orlando, FL, Dec. 7-11, 1987, Technical Papers. Washington, DC, American Institute of Aeronautics and Astronautics, 1987, p. 155-157.

(AIAA PAPER 87-3093) Copyright

The paper discusses the issue of electronic vulnerability of computer based systems supporting NASA Goddard Space Flight Center (GSFC) by unauthorized users. To test the security of the system and increase security awareness, NYMA, Inc. employed computer 'hackers' to attempt to infiltrate the system(s) under controlled conditions. Penetration procedures, methods, and descriptions are detailed in the paper. The procedure increased the security consciousness of GSFC management to the electronic vulnerability of the system(s). Author

A88-26213*# National Aeronautics and Space Administration, Washington, DC.

PROTECTING SENSITIVE SYSTEMS AND DATA IN AN OPEN AGENCY

DOUGLAS B. HUNT (NASA, Washington, DC) and FREDERICK G. TOMPKINS (Management Dimensions Corp., Hanover, MD) IN: Applying technology to systems; Aerospace Computer Security Conference, 3rd, Orlando, FL, Dec. 7-11, 1987, Technical Papers. Washington, DC, American Institute of Aeronautics and Astronautics, 1987, p. 158-166. refs

(AIAA PAPER 87-3092) Copyright

This paper focuses on the policy and definitional issues associated with providing adequate and reasonable levels of protection for sensitive systems and data in an agency whose basic charter mandates the open sharing of information and transfer of technology into the market economy. An information model based on current Federal regulatory issuances is presented. A scheme for determining sensitivity levels, based on a categorization taxonomy, is provided. Author

N84-21402# RAND Corp., Santa Monica, CA

INFORMATION SYSTEMS, SECURITY AND PRIVACY

W. H. WARE Nov 1983 20 p refs Presented at Subcomm. on Transportation, Aviation and Mater, Comm. on Sci. and Technology, U.S. House of Representatives, Washington, D.C., 24 Oct. 1983

(RAND/P-6930; AD A5193) Avail. NTIS HC A03/MF A01

SYSTEMS SECURITY

A brief overview concerning the security of information and computer systems was presented and the relationship between security and personal privacy was examined. Record keeping privacy concerns protecting personal information and controlling its use for authorized purposes. Computer security provides protective mechanisms that assure computer system safety and protect the stored information including access to that information. Defense environment security was contrasted with commercial security. Threats against Department of Defense security involve large technical and financial resources of major world powers while the industrial threat is comparatively minor and involves authorized individuals using the system for personal gain. Several suggestions for the improvement of security for computer software and the related systems are presented, including preparation of a standard government handbook listing preferred procedures for running a computer center, clarification of personal privacy laws, and vendor obligations regarding security safeguards. M.A.C.

N84-26317*# Mitre Corp., McLean, VA.
GUIDELINES FOR DEVELOPING NASA (NATIONAL AERONAUTICS AND SPACE ADMINISTRATION) ADP SECURITY RISK MANAGEMENT PLANS Final Report
F. G. TOMPKINS Aug. 1983 60 p refs
(Contract NASW-3425)

(NASA-CR-173564; NAS 1.26:173564; PB84-171321; MTR-83W123) Avail: NTIS HC A04/MF A01 CSCL 09/2

This report presents guidance to NASA Computer security officials for developing ADP security risk management plans. The six components of the risk management process are identified and discussed. Guidance is presented on how to manage security risks that have been identified during a risk analysis performed at a data processing facility or during the security evaluation of an application system. GRA

N84-26318*# Mitre Corp., McLean, VA.
GUIDELINES FOR DEVELOPMENT OF NASA (NATIONAL AERONAUTICS AND SPACE ADMINISTRATION) COMPUTER SECURITY TRAINING PROGRAMS Final Report
F. G. TOMPKINS May 1983 50 p refs
(Contract NASW-3425)
(NASA-CR-173562; NAS 1.26:173562; PB84-171339; MTR-83W68) Avail: NTIS HC A03/MF A01 CSCL 09/2

The report presents guidance for the NASA Computer Security Program Manager and the NASA Center Computer Security Officials as they develop training requirements and implement computer security training programs. NASA audiences are categorized based on the computer security knowledge required to accomplish identified job functions. Training requirements, in terms of training subject areas, are presented for both computer security program management personnel and computer resource providers and users. Sources of computer security training are identified. Author (GRA)

N84-28498# Department of Defense, Fort Meade, MD. Computer Security Center.
DEPARTMENT OF DEFENSE TRUSTED COMPUTER SYSTEM EVALUATION CRITERIA Final Report
15 Aug. 1983 110 p
(AD-A141304; CSC-STD-001-83) Avail: NTIS HC A06/MF A01 CSCL 09/2

Evaluation criteria that classify systems into four broad hierarchical divisions of enhanced security protection are defined. These provide a basis for the evaluation of the effectiveness of security controls built into automatic data processing (ADP) system products. Two types of requirements delineated for secure processing: (1) specific security feature requirements, and (2) assurance requirements. Although the criteria are application-independent, it is recognized that the specific security feature requirements may have to be interpreted when applying the criteria to specific applications or other special processing environments. The underlying assurance requirements can be applied across the entire spectrum of ADP system or application processing environments without special interpretation. Rationale

and control objectives behind the criteria are provided as are guidelines for the development of secure systems using these criteria. Author (GRA)

N84-30736# System Development Corp., McLean, VA.
GUIDELINE FOR COMPUTER SECURITY CERTIFICATION AND ACCREDITATION. CATEGORY: ADP (AUTOMATIC DATA PROCESSING) OPERATIONS. SUBCATEGORY: COMPUTER SECURITY. FEDERAL INFORMATION PROCESSING STANDARDS Final Report, Jan. 1981 - Sep. 1982

W. NEUGENT and Z. G. RUTHBERG 27 Sep. 1983 94 p refs

(FIPS-PUB-102) Avail: NTIS HC A05/MF A01; also available in three ring binder, North American Continent price \$6.25; all others write for quote CSCL 09/2

This guideline is intended for use by ADP managers and technical staff in establishing and carrying out a program and a technical process for computer security certification and accreditation of sensitive computer applications. It identifies and describes the steps involved in performing computer security certification and accreditation; it identifies and discusses important issues in managing a computer security certification and accreditation program; it identifies and describes the principal functional roles needed within an organization to carry out such a program; and it contains sample outlines of an Application Certification Plan and a Security Evaluation Report as well as a sample Accreditation Statement and sensitivity classification scheme. GRA

N84-30737*# Mitre Corp., McLean, VA. Metrek Div.
GUIDELINES FOR CONTINGENCY PLANNING NASA (NATIONAL AERONAUTICS AND SPACE ADMINISTRATION) ADP SECURITY RISK REDUCTION DECISION STUDIES Final Report

F. G. TOMPKINS Jan. 1984 64 p refs

(Contract NASW-3425)

(PB84-189836; MTR-83W203) Avail: NTIS HC A04/MF A01 CSCL 09/2

Guidance is presented to NASA Computer Security Officials for determining the acceptability or unacceptability of ADP security risks based on the technical, operational and economic feasibility of potential safeguards. The risk management process is reviewed as a specialized application of the systems approach to problem solving and information systems analysis and design. Reporting the results of the risk reduction analysis to management is considered. Report formats for the risk reduction study are provided. GRA

N84-31989# Hanford Engineering Development Lab., Richland, WA.

FUNDAMENTALS OF COMPUTER SECURITY

F. M. BERTING 4 Apr. 1984 6 p refs Presented at the 7th Intern. Conf. of Women Engr. and Sci., Washington, D.C., 17-24 Jun 1984

(Contract DE-AC06-76FF-02170)

(DE84-011476; HEDL-SA-3128-FP, CONF-8406118-1) Avail: NTIS HC A02/MF A01

Computer systems managers must address the need for protecting important company information and programs used to process that information by computers. Not related to the government classified category, this data is anything that could cause loss or harm to the company if altered, destroyed, or divulged. Threats specific to computer systems, such as unauthorized access to, or improper use of such data must be addressed without spending more on protective measures than is asked. Procedures are available to estimate such risks. Actions of people pose far greater threats than fire, flood or major disasters. Protective measures, therefore, emphasize preventing people from doing harm, accidentally or maliciously, by keeping out the unauthorized, tracking the activities of the authorized, and maintaining back up copies of everything required for essential company operations. DOE

N84-32302# General Accounting Office, Washington, DC
Resources Community and Economic Development Div
**DEPARTMENT OF ENERGY'S ACTIVITIES TO LIMIT
DISTRIBUTION OF CERTAIN UNCLASSIFIED SCIENTIFIC AND
TECHNICAL INFORMATION**

30 Mar. 1984 28 p
(PB84-189158; B8212184, GAO/RCED-84-129; Avail. NTIS HC
A03/MF A01 CSCL 05/2)

The Department of Energy is a major publisher of unclassified scientific and technical information. The Technical Information Center, the Department's repository, sends most of its unclassified information to the National Technical Information Service, which sells it to the public. However, some of the information is limited to distribution within the federal government because it involves nuclear safety matters; securing foreign research results; or protecting patentable, proprietary, and other information. This report describes the Department's procedures and controls for determining, distributing, and accessing unclassified information that is not made available to the public. GRA

N85-19691# Committee on the Judiciary (U.S. House).
COMPUTER CRIME

Washington GPO 1984 83 p refs Hearings before the
Subcomm. on Civil and Constitutional Rights of the Comm. on the
Judiciary, 98th Congr., 1st Sess., 18 Nov. 1983
(GPO-30-544) Avail. Subcommittee on Civil and Constitutional
Rights

Testimony addressing computer-related crime is presented and the question of the Federal interest in outlawing unauthorized use of private sector computer equipment or the information stored in computerized files is raised. The potential of computer technology and data exchange for jeopardizing the privacy rights or ownership interests of the individual users or subjects is also examined

M.G.

N85-21994# Committee on Science and Technology (U.S. House).

**COMPUTER AND COMMUNICATIONS SECURITY AND
PRIVACY**

Washington GPO 1985 133 p refs Hearing before the
Subcomm. on Transportation, Aviation and Materials of the Comm.
on Sci. and Technol., 98th Congr., 2nd Sess., No. 123, 24 Sep.
1984
(GPO-39-741) Avail. Subcommittee on Transportation, Aviation
and Materials

Computer and communications security and privacy were discussed. Better ways for storage and making information available and at the same time protecting the information are explored. Computer management, automated systems, protection of data, government and industry relations computer fraud and crime, economic viability, certification, and professional ethics are addressed. EAK

N85-24793# National Bureau of Standards, Gaithersburg, MD.
Center for Programming Science and Technology.
**SECURITY OF PERSONAL COMPUTER SYSTEMS: A
MANAGEMENT GUIDE Final Report**

D. D. STEINAUER Jan. 1985 66 p refs
(PB85-161040; NBS/SP-500/120; LC-84-601156) Avail. NTIS
HC A04/MF A01; also available SOD HC as SN003-003-02627-1
CSCL 09/2

This document is a security guide for managers and users of personal computer systems. It describes the nature of information security problems involved in the use of personal and other small computer systems and provides guidance for addressing those problems. GRA

N85-28593*# Mitre Corp., McLean, VA Metrek Div
**NASA GUIDELINES FOR ASSURING THE ADEQUACY AND
APPROPRIATENESS OF SECURITY SAFEGUARDS IN
SENSITIVE APPLICATIONS**

F. G. TOMPKINS Sep. 1984 127 p refs

(Contract NASW-3425)

(NASA-CR-175489; NAS 1.26.175489, MT 1.84W-GC179) Avail.
NTIS HC A07/MF A01 CSCL 09/2

The Office of Management and Budget (OMB) Circular A-71, transmittal Memorandum No. 1, requires that each agency establish a management control process to assure that appropriate administrative, physical and technical safeguards are incorporated into all new computer applications. In addition to security specifications, the management control process should assure that the safeguards are adequate for the application. The security activities that should be integral to the system development process are examined. The software quality assurance process to assure that adequate and appropriate controls are incorporated into sensitive applications is also examined. Security for software packages is also discussed. Author

N86-15208 Texas Univ., Austin.

**A COMPARATIVE STUDY OF OCLC, INC. AND THE
WASHINGTON LIBRARY NETWORK IN TWENTY-NINE
PACIFIC NORTHWEST ACADEMIC LIBRARIES Ph.D. Thesis**

B. L. DECOSTER 1984 241 p
Avail: Univ. Microfilms Order No. DA8513207

Two hundred and two surveys were mailed to librarians at twenty-nine Pacific Northwest academic libraries that were members of either the Washington Library Network or OCLC, Inc. The librarians were asked to rate their degree of satisfaction with twenty-one aspects of their bibliographic database and the degree of usefulness of twenty-four database capabilities, regardless of their current availability, on a five-point Likert-type scale. One hundred fifty-five (77 percent) of the librarians responded. Chi-square tests were used to compare their responses. In an overall satisfaction rating, WLN librarians were significantly more satisfied with their bibliographic database than were the OCLC librarians. WLN librarians rated significantly higher than the usefulness of the abilities to order materials online from vendors and to perform title keyword searches. OCLC librarians rated significantly higher: the usefulness of the abilities to perform interlibrary loan transactions online, to limit searches by date(s), and to limit searches by format. WLN librarians rated satisfaction with the number of access points available to them significantly higher than did OCLC librarians. OCLC librarians rated their training manuals significantly higher. Dissert. Abstr.

N86-15919# Committee on Science and Technology (U.S. House).

COMPUTER SECURITY POLICIES

Washington GPO 1985 182 p refs Hearing before the
Subcommittee on Transportation, Aviation and Materials of the
Committee on Science and Technology, 99th Congr., 1st Sess.,
no. 26, 27 Jun. 1985
(GPO-52-154) Avail. Subcommittee on Transportation, Aviation
and Materials

A congressional hearing was conducted and expert testimony heard on the subject of computer security policies. GLC

N86-19950*# National Aeronautics and Space Administration
Langley Research Center, Hampton, VA.

A PROCESS ACTIVITY MONITOR FOR AOS/V5

R. A. MCKOSKY (Rockwell International), S. W. LINDLEY (Rockwell International), and J. S. CHAPMAN Washington Jan. 1986
30 p
(NASA-TM-86535, NAS 1.15-86535) Avail: NTIS HC A03/MF
A01 CSCL 09/2

With the ever increasing concern for computer security, users of computer systems are becoming more sensitive to unauthorized access. One of the initial security concerns for the Shuttle Management Information System was the problem of users leaving their workstations unattended while still connected to the system. This common habit was a concern for two reasons: it ties up resources unnecessarily and it opens the way for unauthorized access to the system. The Data General MV/100 does not come equipped with an automatic time-out option on interactive peripherals. The purpose of this memorandum is to describe a

SYSTEMS SECURITY

system which monitors process activity on the system and disconnects those users who show no activity for some time quantum. Author

N86-24562# DOD Security Review Commission, Washington, DC.

KEEPING THE NATION'S SECRETS: A REPORT TO THE SECRETARY OF DEFENSE BY THE COMMISSION TO REVIEW DOD SECURITY POLICIES AND PRACTICES Final Report

R. G. STILWELL 19 Nov 1985 121 p
(AD-A161998) Avail NTIS HC A06/MF A01 CSCL 05/1

The report contains an introduction, executive summary, overview and a three part report with sixty-three recommendations for change in DoD security policies and procedures related to the protection of classified material. Policy and Procedures, the first section of the report's main body, includes classified information access (clearances, investigations, adjudication, cryptographic controls, personnel supervisory evaluations and personnel information collection), managing and controlling classified information (classification, dissemination, transmission, retention and storage, special access program and international transfer agreements), and detecting and countering hostile intelligence, security awareness, reporting of possible espionage, and detecting and investigating security violators. Management and execution, the second part of the report, includes command emphasis, organizational arrangements, research, training, career development and program oversight. Resource management is the third and final section of the report. GRA

N86-25140# National Bureau of Standards, Gaithersburg, MD
Center for Programming Science and Technology
TECHNOLOGY ASSESSMENT: METHODS FOR MEASURING THE LEVEL OF COMPUTER SECURITY Final Report, 1980 - 1981

W. NEUGENT, J. GILLIGAN, L. HOFFMAN, and Z. G. RUTHBERG 1985 208 p Prepared in cooperation with System Development Corp., McLean, Va. and George Washington Univ., Washington, D.C.

(PB86-129954; NBS/SP-500/133; LC-85-600600) Avail. NTIS HC A10/MF A02; also available SOD HC \$8.00 as
SN003-003-02686-7 CSCL 09/2

The document is a companion to FIPS PUB 102, Guideline for Computer Security Certification and Accreditation. Since a security certification depends upon a technical security evaluation, this document is meant to provide information on twenty-five evaluation methods in common use today in the security, EDP audit, and risks analysis communities. GRA

N86-29568*# National Aeronautics and Space Administration
Ames Research Center, Moffett Field, CA

ACCESS CONTROL AND PRIVACY IN LARGE DISTRIBUTED SYSTEMS

B. M. LEINER and M. BISHOP 7 Mar 1983 18 p
(Contract NCC2-387)

(NASA-TM-89397; RIACS-TR-86.6, NAS 1 15 89397) Avail NTIS HC A03/MF A01 CSCL 09/2

Large scale distributed systems consists of workstations, mainframe computers, supercomputers and other types of servers, all connected by a computer network. These systems are being used in a variety of applications including the support of collaborative scientific research. In such an environment, issues of access control and privacy arise. Access control is required for several reasons, including the protection of sensitive resources and cost control. Privacy is also required for similar reasons, including the protection of a researcher's proprietary results. A possible architecture for integrating available computer and communications security technologies into a system that meet these requirements is described. This architecture is meant as a starting point for discussion, rather than the final answer. Author

N87-12397# Office of Technology Assessment, Washington, DC

FEDERAL GOVERNMENT INFORMATION TECHNOLOGY: MANAGEMENT, SECURITY AND CONGRESSIONAL OVERSIGHT

Feb. 1986 190 p

(PB86-205499; OTA-CIT-297, LC-86-600507) Avail NTIS HC A09/MF A01 CSCL 05/2

Five major issues are addressed: management of information technology, including strategic planning, innovation, procurement, and the information resources management (IRM) concept; information systems security and computer crime; information technology and decision support, management of government information dissemination; and opportunities for using information technology in conducting congressional oversight. GRA

N87-23151# Sandia National Labs., Albuquerque, NM
CONSIDERATIONS IN DEVELOPING A COMPREHENSIVE COMPUTER SECURITY SUPPORT DATABASE SYSTEM

J. J. CLEVER 1987 18 p Presented at the Department of Energy Computer Security Group Conference, Albuquerque, N. Mex., 5 May 1987

(Contract DE-AC04-76DP-00789)

(DE87-005527, SAND-86-2543C, CONF-870565-1) Avail. NTIS HC A03/MF A01

In the past several years, computer technology has mushroomed on all fronts. This has resulted in the computer security professional encountering the problem of an ever increasingly complex demand for control, audit, and counter-measure efforts, with concomitantly greater demands on scarce personal time. This paper examines the background of the problem in the practical context of an existing larger organization. It then looks at some of the managerial, technical and economic considerations involved in achieving a higher level of individual productivity at minimal personnel costs. In this instance, the methodology reviewed considerations for developing support from an automated database. Finally, it provides an overview of the database schema, a summary of the initial applications design, and a review of some concerns encountered at implementation of the concept. DOE

N87-23152# Sandia National Labs., Albuquerque, NM.
ELEMENTS OF A PROPOSED SECURITY METHODOLOGY FOR NETWORKS OF COMPUTERS

L. G. PIERSON and E. L. WITZKE Oct 1986 13 p

(Contract DE-AC04-76DP-00789)

(DE87-006769, SAND-86-2453) Avail NTIS HC A03/MF A01

Described are the components or elements of a proposed security methodology for networks of computers. This general security methodology separates the security life of a computer network into two phases; the design, review, and accreditation phase, and the operational phase. The first phase deals with system security planning, implementation, certification, and accreditation for operation. The second phase deals with the processing of unusual events which may be of security interest during the operation of a computer network. The unusual events are processed through a series of filters to determine if the event is associated with a loss or unauthorized activity. Detection and processing of certain kinds of unusual events may cause the update and review of the elements in the first phase (design, review, and accreditation). DOE

N87-24232# Lawrence Livermore National Lab., CA
LIVERMORE RISK ANALYSIS METHODOLOGY: A QUANTITATIVE APPROACH TO MANAGEMENT OF THE RISK ASSOCIATED WITH THE OPERATION OF INFORMATION SYSTEMS

S. B. GUARRO, A. A. GARCIA, C. C. WOOD, and P. G. PRASSINOS 14 Aug 1986 18 p Presented at the Computer and Communications Security Conference, New York, N.Y., 7 Oct. 1986

(Contract W-7405-ENG-48)

(DE87-006828; UCRL-95133, CONF-8610255-1) Avail NTIS HC A03/MF A01

Risk assessment methods vary in nature and depth. Their application to the evaluation of information security issues should be decided on the basis of their capability to provide answers to practical and fundamental questions concerning the design and implementation of security controls in specific information systems. Quantitative risk analysis provides an objectively based approach to the problem of assessing and managing risk. As a decision making and risk assessment tool, it is not only capable of identifying potential losses that could be unacceptable for a given system, but it can be used to determine which specific security controls and countermeasures can be effective and cost justifiable. The Livermore Risk Analysis Methodology (LRAM) was developed to cover these objectives in a balanced and comprehensive way. Its model and procedures, from the identification of valuable assets to the prioritization and budgeting of proposed controls, are examined and discussed both from the technical and from the decision making/risk management perspectives. DOE

N87-27550# Defense Technical Information Center, Alexandria, VA. Office of Information Systems and Technology.

ARTIFICIAL INTELLIGENCE DEVELOPMENTS RE: DOD GATEWAY INFORMATION SYSTEM (DGIS) AND DEFENSE APPLIED INFORMATION TECHNOLOGY CENTER (DAITC)

ALLAN D KUHN Feb. 1987 19 p
(AD-A181101; DTIC/TR-87/9; DTIC-AI-FOUNDATIONAL-SER-2)
Avail: NTIS HC A03/MF A01 CSCL 05/2

The artificial intelligence (AI) activities of the DGIS and DAITC are summarized. AI-like developments are discussed as precursors to true AI activity. The DGIS is presented as a low-level AI-like system, which attempts to mimic human responses. The DAITC is now being established as an information technology resource for DOD. The missions of the individual DAITC laboratories are described. These laboratories will study applications of AI, high density storage, interconnectivity, video laser disk, and human factors. The overall objective of implementing AI applications will be to make the human-machine interface more human-like. GRA

N88-20210# Office of Technology Assessment, Washington, DC.

DEFENDING SECRETS, SHARING DATA: NEW LOCKS AND KEYS FOR ELECTRONIC INFORMATION

Oct. 1987 191 p
(PB88-143185; OTA-CIT-310) Avail: NTIS HC A09/MF A01; also available SOD HC \$8.50 as 052-000-010-83-6 CSCL 05/2

Federal policies directed at protecting information, particularly in electronics communications systems are examined. Also examined are the vulnerability of communications and computer systems, and the trends in technology for safeguarding information in these systems. The primary activities and motivations of stakeholders such as banks, government agencies, vendors and standards developers to generate and use safeguards are reviewed. The focus is on issues stemming from possible conflicts among Federal policy goals and important trends taking place in the private sector are addressed. GRA

N88-22542# Los Alamos National Lab., NM.

MONITORING THE USAGE OF A COMPUTER SYSTEM

D. J. BAILEY Nov. 1987 14 p Presented at the IEEE Symposium on Security and Privacy, Oakland, Calif., 1 Apr 1988 (Contract W-7405-ENG-36)
(DE88-004310; LA-UR-87-4103; CONF-880456-1) Avail: NTIS HC A03/MF A01

Controlling the usage of computer systems particularly those operated for the Federal government, is an important topic today. Audit requirements have grown to the point where they can be a significant burden to the proprietors of the system. The paper briefly mentions several proposals for responding to increased audit requirements and for monitoring a system to detect unauthorized activity. A technique is proposed for situations where the proscribed or the intended activity can be characterized in terms of program or system performance parameters. The design

of a usage monitoring system is outlined. The design is based on enhancing the audit data provided by the monitored system, capturing the audit data in a separate system to protect it from user access, and implementing one of the audit trail analysis systems currently under development. DOE

N88-25163# Transportation Systems Center, Cambridge, MA.
COMPUTER RESOURCE MANAGEMENT TECHNOLOGY PROGRAM (PE 64740F). TASK NO. 9: ADVANCED USER AUTHENTICATION Final Report, May - Nov. 1987

L. WATSON and W. BARRON Mar. 1988 125 p Sponsored by the Air Force, Hanscom AFB, Mass.
(PB88-183066; DOT-TSC-RSPA-88-1; DOT-VA846-88-1) Avail. NTIS HC A06/MF A01 CSCL 09/2

The various technologies which can be used to perform user authentication are examined with an emphasis on biometric techniques. The methods by which each device performs the authentication of users are examined individually, and their suitability for a multilevel computer environment is assessed. The status and direction of computer user authentication devices and techniques, in general, are evaluated. Included are independent testing results, government requirements, selection considerations, and a glossary of computer security and user authentication terminology. Author

N84-73042# California Univ., Los Angeles. Dept. of Computer Science.

SECURE DISTRIBUTED PROCESSING SYSTEMS Quarterly Technical Reports, 1 Jul. 1977 - 30 Apr. 1978

G. J. POPEK Jun. 1978 31 p
(Contract MDA903-77-C-0211; ARPA ORDER 3396)
(AD-A134935; UCLA-SDPS-78-002)

N85-70325# Mitre Corp., McLean, VA.
GUIDELINES FOR CERTIFICATION OF EXISTING SENSITIVE SYSTEMS Final Report

P. A. GIRAGOSIAN, D. W. MASTBROOK, and F. G. TOMPKINS Jul. 1982 45 p refs
(Contract -ASW-3425)
(NASA-CR-174080; NAS 1.26:174080, PB84-232122; MTR-82W18)

N85-72106 General Services Administration, Washington, DC
GSA AUTOMATED INFORMATION SECURITY

29 Oct. 1984 24 p
(PMS-P-2100 1-CHGE-1)

N85-72650 General Services Administration, Washington, DC
Office of Policy and Management Systems.

GSA AUTOMATED INFORMATION SECURITY
W. A. CLINKSCALES 19 Apr. 1984 77 p
(PMS-P-2100.1)

N85-74089# Sytek, Inc., Mountain View, CA
SECURITY CONCEPTS FOR MICROPROCESSOR BASED KEY GENERATOR CONTROLLERS Final Report, 30 Sep. 1982 - 31 Mar. 1984

R. K. BAUER, R. J. FEIERTAG, B. L. KAHN, and W. F. WILSON 24 Apr. 1984 73 p
(Contract MDA904-82-C-0449)
(AD-A155194; SYTEK-TR-84009)

N85-74267# Mitre Corp., Bedford, MA.
THE TRUSTED FUNCTION IN SECURE DECENTRALIZED PROCESSING Technical Report

P. T. WITHINGTON Sep. 1979 43 p
(Contract F19628-79-C-0001, ARPA ORDER 3338)
(AD-A155252, MTR-3892)

N85-74342 General Accounting Office, Washington, DC
TELECOMMUNICATIONS SECURITY AND PRIVACY
W. G. REED 17 Oct. 1983 31 p refs

N88-70733 Oak Ridge Gaseous Diffusion Plant, TN. Computing and Telecommunications Div.
USING BAR CODE TECHNOLOGY TO ENHANCE CLASSIFIED DOCUMENT ACCOUNTABILITY
 PATRICK J. MOUNTAIN and DONALD J. WADE /n
 DOE/Contractors Micrographics and Information Association, Proceedings of the 14th Annual Conference of the DOE/Contractors Micrographics and Information Information Management Association 44 p 1986
 (Contract DE-AC05-84OR-21400)
 Avail: NTIS

INTELLECTUAL PROPERTY

Rights to information and data are a complex, and often sore subject for both the Federal and private sectors. IRM managers have to be versed in the legal and policy issues, and agile at avoiding pitfalls, as well as taking advantage of available practices.

A84-22341*# National Aeronautics and Space Administration, Washington, DC.
SPACE SHUTTLE, PRIVATE ENTERPRISE AND INTELLECTUAL PROPERTIES IN THE CONTEXT OF SPACE MANUFACTURING
 S. N. HOSENBALL and R. F. KEMPF (NASA, Washington, DC)
 IN: Manufacturing in space; Proceedings of the Winter Annual Meeting, Boston, MA, November 13-18, 1983. New York, American Society of Mechanical Engineers, 1983, p. 149-160.
 Copyright

It is a national policy to make the capabilities of the Space Transportation System available to a wide range of potential users. This includes its availability as a space manufacturing facility for commercial activities, which may be carried out on a reimbursable basis or as a joint endeavor with NASA, but with substantial private investment. In any high risk, long lead-time research and development activity directed towards commercialization, the protection afforded the results of the research and development under the laws relating to intellectual property rights may provide an important incentive for private investment. The paper reviews NASA's policies and practices for the protection of privately-established intellectual property rights involved in STS use, with particular emphasis on reimbursable launch agreements and joint endeavor agreements. Author

A85-29025
COLLOQUIUM ON THE LAW OF OUTER SPACE, 27TH, LAUSANNE, SWITZERLAND, OCTOBER 7-13, 1984, PROCEEDINGS
 Colloquium sponsored by the International Astronautical Federation. New York, American Institute of Aeronautics and Astronautics, 1985, 426 p. No individual items are abstracted in this volume
 Copyright

Selected aspects of space law are examined in reviews and reports. Topics discussed include space law and domestic law, space activities and intellectual property (including industrial property), nuclear power sources in outer space, legal aspects of large space structures, conditions essential for maintaining outer space for peaceful uses, and the impact of present and expected uses of outer space on the space environment. Consideration is given to U.S. law applying to land remote sensing, U.S. government authorization and supervision of nongovernmental space activities, space law and the concepts of Roman law, patent law activities of states in industrial-property technology cooperation, prospects for the demilitarization of manned space stations, jurisdiction problems of large space systems, large structures on the moon, legal measures for the prevention of an arms race in space, collision probabilities in the geostationary ring, and the indivisibility of environmental protection in vertical space. T.K.

A85-49972
INTELLECTUAL PROPERTY AND SPACE ACTIVITIES
 B. LUXENBERG (U.S. Department of Commerce, Washington, DC) and G. J. MOSSINGHOFF (Pharmaceutical Manufacturers Association, Washington, DC) Journal of Space Law, vol. 13, no. 1, 1985, p. 8-21. refs
 Copyright

The need for protection of data, products, and ideas as the commercialization of space continues is discussed. Some of the international and national laws of space which govern proprietary information and commercialization are presented. The development of laws to protect copyrighted works transmitted by satellite and remote sensing is described. NASA's policy toward intellectual property rights is to protect proprietary interests and encourage industrial participation in commercial space activities. Explanations of these policies are provided. The future property rights to possible inventions made by reimbursable users on the Space Shuttle and the Space Station are examined. I.F.

A86-34121#
ADJUSTING LEGAL REGIMES TO NEW COMMERCIAL REALITIES

D. J. BURNETT (Benner, Burnett and Coleman, Washington, DC)
 IN: U.S. Opportunities in Space Conference; Proceedings of the Second Annual Space Business Conference, Washington, DC, October 30-November 1, 1985. London, Space Consultants International, Ltd., 1985, 19 p.

Legal issues regarding multinational commercial space activities are discussed. The formation of international laws or agreements concerning financial and technical support for multinational space activities, the intellectual property rights for technologies developed as part of a multinational space project, and the protection of national security and state sovereignty is examined. The intergovernmental agreements need to be multilateral and issued from the highest government official. I.F.

A86-43349
ASPECTS OF LAW AND PRACTICE IN THE UNITED STATES
 B. LUXENBERG (DOC, Washington, DC) IN: Space stations: Legal aspects of scientific and commercial use in a framework of transatlantic cooperation; Proceedings of the International Colloquium, Hamburg, West Germany, October 3, 4, 1984. Cologne, West Germany, Carl Heymanns Verlag, 1985, p. 175-185. refs
 Copyright

The establishment of a permanently orbiting space station will usher in a new era, in which a significant shift will occur toward private entrepreneurial activity in space. However, in order to provide an incentive to private entities to engage in such ventures, the protection of intellectual property resulting from space station activities must be assured. The international law of outer space is considered along with developments regarding intellectual property rights in the case of NASA, commercial activities in space, national policy on space commercialization, and issues for the future. It is pointed out that NASA has developed flexible legal arrangements for companies pursuing commercial space ventures in the shuttle era and that this policy will undoubtedly carry over into the space station. G.R.

A87-18859#
PROTECTION OF INTELLECTUAL PROPERTY IN SPACE
 J. L. LANDENBERGER (Booz, Allen and Hamilton, Inc., Bethesda, MD) IN: Aerospace Computer Security Conference, 2nd, McLean, VA, December 2-4, 1986, Technical Papers. New York, American Institute of Aeronautics and Astronautics, 1986, p. 80-85. refs
 (AIAA PAPER 86-2779) Copyright

This paper addresses issues concerning the protection of intellectual property in the space industry, for the Space Shuttle and Space Station. The author defines intellectual property and discusses the current functional and security environments of the Space Shuttle and the proposed Space Station. The protection of intellectual property is defined as a fundamental operational consideration in the Space Shuttle and Space Station because corporations and international users will provide confidential and

proprietary data to operating teams and crews in order to conduct onboard experiments. The author also addresses the fact that onboard defense missions require intellectual property protection to protect national security. The paper concludes by identifying methods for improving the protection of intellectual property in the Space Station environment. Author

A87-34597

THE STATION IS RAISING LOTS OF QUESTIONS ABOUT SPACE LAW

Commercial Space (ISSN 8756-4831), vol. 2, no. 4, Winter 1987, p. 43, 45. Copyright

The U.S./international space station program may give rise to unprecedented legal questions when it becomes operational, questions involving disputes over such things as criminal activity on the station, industrial espionage, intellectual property rights in space, export law, and product liability. Agreements among the four space partners - the U.S., Canada, Japan, and the European Space Agency - are needed to clarify the legal questions. Experts believe that some existing laws can be transferred to space, but others will be inapplicable. If the U.S. were to assert sole jurisdiction over the station, other countries could choose to withdraw their participation. Having 'national enclaves' aboard the station is unacceptable to the U.S. Setting up an international governmental organization, such as Intelsat, might be a possibility. A measure to extend U.S. patent laws to cover devices invented aboard launch vehicles and spacecraft is expected to be brought up again during the current legislative session. Although some members of Congress are concerned about adequate protection of U.S. interests, some experts think it would be best to wait and write the laws where the need for them is specifically evident. Author

A88-19830

REMOTE SENSING AND THE FIRST AMENDMENT

MARK E. BRENDER (American Broadcasting Co., Washington, DC) Space Policy (ISSN 0265-9646), vol. 3, Nov. 1987, p. 293-297. Copyright

The strict licensing requirements for remote-sensing satellites imposed by the U.S. Land Remote Sensing Commercialization Act (LRSCA) of 1984 (as implemented by rules and regulations published in August 1987) are examined critically from the standpoint of the news media. Consideration is given to the improved resolution of present satellites, the value of up-to-date satellite imagery for news reporting, proposals for a private-vendor or consortium sponsored Mediasat with resolution even better than that of SPOT (10 m), the commercial viability of a Mediasat, the possible impact of a Mediasat on the national security of the U.S. and other nations, and the specific provisions of LRSCA. It is argued that LRSCA is both (1) too vague (permitting denial of licenses on intervention of the DOD or State Department, but leaving the key terms 'national security and foreign policy interests' undefined) and (2) in violation of the First Amendment rights of the media to gather news. T.K.

A88-19831

GATHERING NEWS FROM SPACE

RICHARD DALBELLO and RAY A. WILLIAMSON (U.S. Congress, Office of Technology Assessment, Washington, DC) Space Policy (ISSN 0265-9646), vol. 3, Nov. 1987, p. 298-306 refs. Copyright

Developments in remote-sensing technology have prompted suggestions that the news media could soon make routine use of newsgathering from space. A satellite system dedicated to this purpose (a 'Mediasat') could supply critical information. Government policy makers, however, fear that media use of such technology could affect national security, foreign relations, and personal privacy. This article assesses U.S. government policy on current and future newsgathering from space, and the technical potential for a Mediasat system. The authors raise doubts about the commercial viability of Mediasat, and point out that existing media sources already provide information on news stories. They conclude

that concerns over the use of data from space will have to be met on a case-by-case basis as the media gain experience, using the same criteria now applied to balance the right to freedom of information with the need for national security. Author

A89-12126#

INTERNATIONAL SPACE LAW NORMS REGULATING REMOTE SENSING OF THE EARTH FROM OUTER SPACE

CHARLES CHUKWUMA OKOLIE (Okolie International Law Chambers, Chicago, IL) IN: Colloquium on the Law of Outer Space, 30th, Brighton, England, Oct 10-17, 1987, Proceedings Washington, DC, American Institute of Aeronautics and Astronautics, 1988, p. 366-370. refs. Copyright

The applicability of international customary law and treaties to commercial satellite remote sensing of earth resources is examined. The history of space remote sensing is briefly traced, and the applicable UN legislation is characterized in detail. It is argued that currently valid international law, while permitting remote-sensing activities without the consent of the states whose territory is being observed, demands that the states with jurisdiction over the remote-sensing operators encourage them to make the remote-sensing information available to the observed states. T.K.

A89-17871#

INTERNATIONAL SPACE PLANS AND POLICIES - FUTURE ROLES OF INTERNATIONAL ORGANIZATIONS

STEPHEN E. DOYLE (Aerojet TechSystems Co., Sacramento, CA) IAF, International Astronautical Congress, 39th, Bangalore, India, Oct. 8-15, 1988. 14 p. refs. (IAF PAPER 88-622) Copyright

The role of international organizations in international space plans and policy is discussed, including branches of the UN, scientific and technical organizations, and intergovernmental operating global systems. National, regional, and global organizations affecting space activities are outlined. The future needs of space activity are examined, including standardization of astronautical cartography, mission safety practices, health and contamination controls, the definition and policing of criminal activity, and issues of personal status and nationality. The creation of a world space agency within the structure of the UN is proposed to control international space activities. R.B.

A89-33030

LEGAL PROBLEMS POSED BY THE COMMERCIALIZATION OF DATA COLLECTED BY THE EUROPEAN REMOTE SENSING SATELLITE ERS-1

MICHEL BOURELY Journal of Space Law (ISSN 1012-3431), vol. 16, no. 2, 1988, p. 129-146. refs. Copyright

Legal issues related to the commercialization of remote sensing data from ERS-1 are examined. The general principles of remote sensing activities and the commercialization of Eosat, Landsat, SPOT, and Soviet satellite data are reviewed. The legal bases and technical aspects of the ERS-1 program are discussed. The specific rules in the framework of the ERS-1 program concerning the role of the ESA and the participating states in the operational phase are outlined. In addition, consideration is given to international laws which are applicable to the intellectual property regime and the dissemination of ERS-1 data. R.B.

N85-11013# National Aeronautics and Space Administration, Washington, DC.

LEGAL CONSIDERATIONS AND COOPERATIVE OPPORTUNITIES FOR SPACE COMMERCIAL ACTIVITIES

S. N. HOSENBALL In: NASA, Marshall Space Flight Center 2nd Symp on Space Industrialization p. 28-37 Oct. 1984. Avail: NTIS HC A19/MF A03 CSCL 05/4

It is a national policy to make the capabilities of the Space Transportation System available to a wide range of potential users. This includes its availability as a space manufacturing facility for commercial activities, which may be carried out on a reimbursable

INTELLECTUAL PROPERTY

basis or as a joint endeavor with NASA, but with substantial private investment. In any high risk, long lead-time research and development activity directed towards commercialization, the protection afforded the results of the research and development under the laws relating to intellectual property rights may provide an important incentive for private investment. The policies and practices of NASA directed towards the protection of privately-established intellectual property rights involved in STS use are reviewed with particular emphasis on reimbursable launch agreements and joint endeavor agreements. R.S.F.

N86-10586# Shock and Vibration Information Center (Defense), Washington, DC.

EDITORS RATTLE SPACE

R. E. ESHLEMAN, ed. *In its* The Shock and Vibration Digest, Vol. 17, No. 3 o 2 Mar. 1985

Avail: SVIC, Code 5804, Naval Research Lab., Washington, D.C. 20375 CSCL 05/2

The technology transfer process has developed rapidly during the past ten years to provide more knowledge to engineers at a faster rate. However, the distillation of the literature into handbooks and monographs has lagged the progress on information retrieval and short course performance. Up to now there is no magical, fast way to transform specialized technology from journals and reports into handbooks, tables, and computer data bases. The problem always arises on who will organize and pay for it. It is obvious that it requires joint efforts with the cost spread out over many companies. Today, no good means has been found to accomplish this process on a large scale basis. Author

N86-17230# Pacific Northwest Lab., Richland, WA.

TECHNOLOGY TRANSFER IS OPPORTUNITY TRANSFER

T. M. LEVINSON, L. C. SCHMID, and R. L. WATTS Jun. 1985 11 p Presented at the 10th Annual Meeting of the Technology Transfer Society, San Francisco, Calif., 24 Jun. 1985

(Contract DE-AC06-76RL-01830)

(DE85-016622; PNL-SA-12976; CONF-8506175-1) Avail: NTIS HC A03/MF A01

The management of intellectual property and the decision process of selecting federal technologies for transfer is approached from the perspective of how they can be packaged as business opportunities. The package is usually provided by a technologist who is the technology provider and the opportunity must be perceived as such by the business person. Thoughts are provided on the different perspectives of the technology provider and the technology seeker and the environment in which the transfer process occurs. The different perspectives and the environment can cause a disconnect between the research result and its uses. By using selection criteria based on the business person's perspective and by presenting the technology in terms of what it can become helps to mitigate this disconnect. DOE

N86-21458# Committee on Science and Technology (U.S. House).

TECHNOLOGY TRANSFER

Washington GPO 1985 258 p Hearings before the Subcommittee on Science, Research and Technology of the Committee on Science and Technology, 99th Congress, 1st Session, no. 22, 21-22 May 1985

(GPO-49-539) Avail: Subcommittee on Science, Research and Technology

The Congressional Subcommittee on science, research and technology held hearings on primarily technology transfer. The legislation was proposed on: utilization of federal technology basic research, commercializing intellectual property, technology utilization, stimulation of global competition, improvement of city services, stimulation of local economics, Federal commercial cooperation, and technology transfer from Government to private sector. E.A.K.

N86-27130# Congressional Research Service, Washington DC Office of Senior Specialists.

PUBLIC LAWS OF THE 96TH CONGRESS RELATING TO INFORMATION POLICY

S. N. MILEVSKI 14 Mar. 1986 101 p

(CRS-TK-7885-F) Avail: NTIS HC A06/MF A01

Statutes of the 96th Congress treating information related concerns are enumerated. Limited to public laws of a substantive nature, the topical overview of areas of congressional concern is divided into nine sections. Federal Information Resources Management; International Communications and Information Policy; Telecommunication, Broadcasting, and Satellite Transmission; Intellectual Property; Library and Archives Policies; Information Disclosure, Confidentiality and the Right of Privacy; Computer Security and Crime; Information Technology for Education, Innovation, and Competitiveness, and Government Information Systems, Cleanhousing, and Dissemination. Brief considerations of parallel developments in the executive branch and private sector for 1983 to 1984 are included, along with significant laws from the 95th through 97th Congresses. The appendix provides a compilation of information policy public laws, 1977 through 1984. Author

N87-21754# Office of Technology Assessment, Washington, DC.

SPACE STATIONS AND THE LAW: SELECTED LEGAL ISSUES

Sep. 1986 88 p

(PB87-118220; OTA-BP-ISC-41, LC-86-600569) Avail: NTIS HC A05/MF A01 CSCL 05/4

Part 1 is a background paper which discusses the legal consequences of developing and operating the space station. This paper examines the different ways in which a multinational space station might be owned and operated and explains how each could affect the rights and responsibilities of the U.S. Government and its citizens. In addition, it gives special attention to the application of jurisdiction, tort law, intellectual property, and criminal law to nations and individuals living and working in space. Part 2 of this report is a summary of the workshop held by OTA to critique and expand on the initial drafts of Part 1. GRA

N88-10695# RAND Corp., Santa Monica, CA

NEW TECHNOLOGIES AND INTELLECTUAL PROPERTY: AN ECONOMIC ANALYSIS

STANLEY M. BESEN May 1987 81 p

(Contract NSF IST-84-15297)

(N-2601-NSF) Avail: NTIS HC A05/MF A01

A greater understanding was developed of how new information and communications technologies may affect the economic system in which knowledge based products and services are created, produced, packaged, distributed, and used. Examined are (1) the economic basis for the systems of private property rights in intellectual property, copyrights, patents, and trade secrets, (2) the economic behavior of producers of intellectual property, (3) the effects of new technologies on that behavior, (4) the effects of the legal treatment of authors, publishers, packagers, distributors, and users; (5) the issues involved in estimating the harm to producers of intellectual property that results from the introduction of new technologies; and (6) various types of government intervention that may be used to promote the supply of intellectual property. Author

N89-12496# Committee on Science, Space and Technology (U.S. House).

INTERNATIONAL SPACE POLICY FOR THE 1990'S AND BEYOND, NO. 86

Washington GPO 1988 132 p Hearing before the Committee on Science, Space, and Technology, 100th Congr., 1st Sess., 10 Dec. 1987

(GPO 52-156) Avail: Subcommittee on Space Science and Applications, House of Representatives, Washington, D.C. 20510 HC free

The Subcommittee on Space Science and Applications of the Committee on Science, Space and Technology of the U.S.

House of Representatives met on 10 December, 1987, to discuss International Space Policy for the 1990's and Beyond. Expert witness was given by Herman Pollack, Chairman, NASA Advisory Council Task Force on International Relations in Space, Dr. James C. Fletcher, NASA Administrator, Michael Michaud, Acting Deputy Assistant Secretary for Science and Technology, Department of State, and Jerry Grey, Director, Science and Technology Policy, American Institute of Aeronautics and Astronautics. F.M.R.

N89-13306# Los Alamos National Lab., NM.

UNITED STATES SPACE POLICY: REVIEW AND ASSESSMENT

PATRICK J. GARRITY Jun. 1988 40 p

(Contract W-7405-ENG-36)

(DE88-015538; LA-11181; CNSS-3) Avail: NTIS HC A03/MF A01

This report summarizes two key documents that reflect official U.S. space policy: (1) the January 1988 Presidential directive on overall U.S. national space policy; and (2) the February 1987 Department of Defense space policy. The report examines various U.S. military, civilian, commercial, and arms control activities as they relate to space. DOE

N89-16609*# National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.

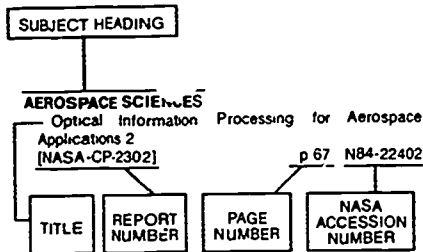
THE IUE DATA BANK: STATISTICS AND FUTURE ASPECTS

MARION SCHMITZ and MICHAEL BARYLAK (European Space Agency. ESA Tracking Station, Madrid, Spain) In ESA, Proceedings of the Celebratory Symposium on a Decade of UV Astronomy with the IUE Satellite, Volume 2 p 369-372 Jun. 1988

Copyright Avail: NTIS HC A19/MF A03

The data exchange policy between Goddard Space Flight Center and ESA's Villafranca (Spain) station is described. The IUE data banks and their uses are outlined. Statistical information on objects observed, the quantity of data distributed and retrieved from the archives, together with a detailed design of the final format of the IUE merged log are also given. ESA

Typical Subject Index Listing



The subject heading is a key to the subject content of the document. The title is used to provide a description of the subject matter. When the title is insufficiently descriptive of document content, a title extension is added, separated from the title by three hyphens. The (NASA or AIAA) accession number and the page number are included in each entry to assist the user in locating the abstract in the abstract section. If applicable, a report number is also included as an aid in identifying the document. Under any one subject heading, the accession numbers are arranged in sequence with the AIAA accession numbers appearing first.

A

ABILITIES

Subjective workload and individual differences in information processing abilities
[SAE PAPER 841491] p 47 A86-26011

ABSTRACTS

Mechanized contract document preparation and abstract system
[AD-P002750] p 4 N84-23297

Annotated bibliography of human factors laboratory reports (1945-1968) Supplement 4, 1979-1983
[AD-A142141] p 51 N84-29481

Evaluation of the vocabulary switching systems
[PB85-127157] p 93 N85-22260

Compilation of abstracts of theses submitted by candidates for degrees
[AD-A151722] p 3 N85-27739

ACCESS CONTROL

Access control and privacy in large distributed systems
[AIAA PAPER 86-2781] p 106 A87-18861

The hack attack - Increasing computer system awareness of vulnerability threats
[AIAA PAPER 87-3093] p 107 A88-26212

Access path optimization for network database retrieval
p 94 N85-27749

Access control and privacy in large distributed systems
[NASA-TM-89397] p 110 N86-29568

Computer resource management technology program (PE 64740F). Task no. 9: Advanced user authentication
[PB88-183066] p 111 N88-25163

Using English for indexing and retrieving
[AD-A202227] p 101 N89-20866

Fostering interaction of government, defense, and aerospace databases
p 103 N89-23374

ACCIDENT INVESTIGATION

The investigative techniques used by the Challenger Commission to address information system failures as they related to the Space Shuttle accident
p 58 A88-46509

ACCOUNTING

Paperwork Reduction Act of 1980
[S-REPT-98-479] p 4 N84-24504
Monitoring the usage of a computer system
[DE88-004310] p 111 N88-22542

ACCURACY

Precision-time tradeoffs. A paradigm for processing statistical queries on databases
[DE88-012024] p 60 N89-11408

ACID RAIN

Data management of a multilaboratory field program using distributed processing
[DE86-014770] p 73 N87-18465

ACQUISITION

Planning and controlling the acquisition costs of Air Force information systems
[AD-A204421] p 16 N89-22528

ADA (PROGRAMMING LANGUAGE)

Distributing program entities in Ada
p 29 N89-16295

A computer-based specification methodology
p 101 N89-16301

DEC Ada interface to Screen Management Guidelines (SMG)
p 101 N89-16303

Generic Ada code in the NASA space station command, control and communications environment
p 29 N89-16341

The TAVERNS emulator: An Ada simulation of the space station data communications network and software development environment
p 76 N89-16366

Rdesign. A data dictionary with relational database design capabilities in Ada
p 43 N89-16368

A database management capability for Ada
p 77 N89-16371

Space station Ada runtime support for nested atomic transactions
p 77 N89-16375

Advanced computing systems. An advanced reasoning-based development paradigm for Ada trusted systems and its application to MACH
[AD-A206308] p 45 N89-24070

AERIAL RECONNAISSANCE

Development of a computer-managed readiness assessment system
[AD-A162931] p 71 N86-24215

AEROSPACE ENGINEERING

Artificial intelligence - New tools for aerospace project managers
p 32 A86-34986

Man/System Integration Standards for space systems
p 48 A87-33020

Educational uses of the aerospace database
[AIAA PAPER 88-0749] p 107 A88-22566

1988 Goddard Conference on Space Applications of Artificial Intelligence, Greenbelt, MD, May 24, 1988. Proceedings
p 33 A89-21801

Bibliographic networks and microcomputer applications for aerospace and defense scientific and technical information
p 98 N87-18923

AEROSPACE ENVIRONMENTS

Spacecraft environmental anomalies expert system
p 43 N89-15607

AEROSPACE INDUSTRY

Educational uses of the aerospace database
[AIAA PAPER 88-0749] p 107 A88-22566

AEROSPACE SAFETY

Key considerations in contingency planning for secure space flight ground control centers
p 105 A85-42596

Man-made space debris - Data needed for rational decision
p 2 A89-12107

AEROSPACE SCIENCES

Optical Information Processing for Aerospace Applications 2
[NASA-CP-2302] p 67 N84-22402

AEROSPACE SYSTEMS

Security engineering of secure ground stations
p 105 A85-42598

Aerospace Computer Security Conference, 2nd, McLean, VA, December 2-4, 1986, Technical Papers
p 105 A87-18852

State-of-the-art in computer security for DoD space systems
[AIAA PAPER 86-2778] p 107 A87-18864

Living in the past - Knowledge capture of evolving space systems
[AIAA PAPER 89-0190] p 34 A89-25165

Technology advances for information access - Prospects and impact
[AIAA PAPER 89-0849] p 91 A89-25618

A Distributed Sensor Architecture for advanced aerospace systems
p 34 A89-26960

Technical and management information system: The tool for professional productivity on the space station program
p 84 N86-15171

National space policy
[AD-A202644] p 16 N89-21711

AEROSPACE TECHNOLOGY TRANSFER

Space Shuttle security policies and programs
p 104 A85-42594

Living in the past - Knowledge capture of evolving space systems
[AIAA PAPER 89-0190] p 34 A89-25165

AEROSPACE VEHICLES
Guidelines for submitting data to the National Space Science Data Center
[NASA-TM-87500] p 23 N86-15209

AGRICULTURE

Computer-aided survey methods
p 86 N89-13954

AGROCLIMATOLOGY

Bangladesh Agro-Climatic Environmental Monitoring Project
p 79 N89-28121

AIR NAVIGATION

An advanced media interface for control of modern transport aircraft navigational systems
[AIAA PAPER 84-2686] p 46 A85-17865

Guidance, navigation, and control for 21st century aircraft
p 1 A86-34194

AIR POLLUTION

Data management of a multilaboratory field program using distributed processing
[DE86-014770] p 73 N87-18465

AIR QUALITY

Meteorological processor for regulatory models (MPRM-1.1) user's guide
[PB89-127526] p 78 N89-22188

AIR TRAFFIC CONTROL

FANS - A U.S. perspective
p 1 A87-11807

LORAN C Offshore Flight Following (LOFF) in the Gulf of Mexico
[AD-A197179] p 75 N89-12558

AIR TRANSPORTATION

Investigation of air transportation technology at Princeton University, 1983
p 38 N87-18528

AIRBORNE/SPACEBORNE COMPUTERS

Future information technology - The big picture
[AAS PAPER 86-111] p 2 A87-53087

AIRCRAFT CONTROL

An advanced media interface for control of modern transport aircraft navigational systems
[AIAA PAPER 84-2686] p 46 A85-17865

Guidance, navigation, and control for 21st century aircraft
p 1 A86-34194

AIRCRAFT DESIGN

Human factors impact on the V-22 Osprey cockpit development - An overview
p 50 A89-18865

Digital mockup - airplane design and production using computer techniques
[AIAA PAPER 89-2086] p 66 A89-49447

TRUSS An intelligent design system for aircraft wings
p 79 N89-25162

AIRCRAFT GUIDANCE

Guidance, navigation, and control for 21st century aircraft
p 1 A86-34194

Investigation of air transportation technology at Princeton University, 1983
p 38 N87-18528

AIRCRAFT MAINTENANCE

Maintenance Management Information and Control System (MMICS) Administrative boon or burden
[AD-A145762] p 83 N85-12790

- IMS: Integrated Maintenance Information System A maintenance information delivery concept p 85 N88-17207
- AIRCRAFT MODELS**
Digital mockup — airplane design and production using computer techniques [AIAA PAPER 88-2086] p 66 A89-49447
- AIRCRAFT PARTS**
Digital mockup — airplane design and production using computer techniques [AIAA PAPER 88-2086] p 66 A89-49447
- AIRCRAFT PILOTS**
Cockpit information management through an intelligent pilot/vehicle interface [AIAA PAPER 88-2086] p 50 A89-49456
- ALGEBRA**
Monotonically improving approximate answers to relational algebra queries [NASA-CR-184874] p 61 N89-20717
A project for developing a linear algebra library for high-performance computers [DE89-007501] p 78 N89-22374
- ALGORITHMS**
Logical optimization for database uniformization [NASA-CR-173636] p 5 N84-32282
Access path optimization for network database retrieval p 94 N85-27749
Text compression using word tokenization [DE88-000832] p 95 N88-19260
A contextual postprocessing expert system for English sentence reading machines [AD-A163951] p 96 N86-26026
Information and stochastic systems [AD-A192167] p 26 N86-24838
Monotonically improving approximate answers to relational algebra queries [NASA-CR-184874] p 61 N89-20717
Compiling high level constructs to distributed memory architectures [NASA-CR-181825] p 30 N89-24058
Resource contention management in parallel systems [AD-A208809] p 32 N89-28332
Algorithm for supporting views in the microcomputer environment [PB89-174155] p 32 N89-71248
- ALLOCATIONS**
Technology transfer [GPO-49-539] p 114 N86-21458
Allocation strategies for APL on the ChIP (configurable highly parallel) computer [AD-A203761] p 32 N89-70704
- ALLOYS**
Prototype material properties data network [NASA-TM-89243] p 24 N86-33208
Materials Information for Science and Technology (MIST) Project overview Phase 1 and 2 and general considerations [DE87-006799] p 73 N87-23312
- ANALOGIES**
Metaphor and common-sense reasoning [AD-A131423] p 35 N84-11756
- ANALYZERS**
Computer-aided writing [AD-A192516] p 54 N88-26837
- ANATOMY**
Three-dimensional computer graphics brain-mapping project [AD-A197053] p 41 N89-11435
- ANOMALIES**
Spacecraft environmental anomalies expert system p 43 N89-15507
- APPLICATIONS OF MATHEMATICS**
Compilation of abstracts of theses submitted by candidates for degrees [AD-A151722] p 83 N85-27739
- APPLICATIONS PROGRAMS (COMPUTERS)**
The evaluation and extension of TAE in the development of a user interface management system p 53 N87-23158
GED-EAS (Geostatistical Environmental Assessment Software) user's guide [PB89-151252] p 89 N89-27261
Guidelines for metric transition of software [PB86-240215] p 17 N87-70232
- ARCHITECTURE**
The computational structural mechanics testbed architecture. Volume 1 The language [NASA-CR-178384] p 76 N89-14472
A multiprocessing architecture for real-time monitoring p 29 N89-15597
The computational structural mechanics testbed architecture. Volume 4 The global-database manager GAL-DBM [NASA-CR-178387] p 76 N89-16195
- ARCHITECTURE (COMPUTERS)**
Interconnecting heterogeneous database management systems p 18 A84-41197
An architecture for intelligent interfaces - Outline of an approach to supporting operators of complex systems p 48 A87-16818
Secure database management system architectural analysis [AIAA PAPER 86-2773] p 106 A87-18857
Access control and privacy in large distributed systems [AIAA PAPER 86-2781] p 106 A87-18861
Issues and themes in information science and technology [AIAA PAPER 87-1661] p 1 A87-31113
Computer architecture for a surrogate file to a very large data/knowledge base p 91 A87-34522
Applying technology to systems: Aerospace Computer Security Conference, 3rd, Orlando, FL, Dec. 7-11, 1987, Technical Papers p 107 A88-26209
A Distributed Sensor Architecture for advanced aerospace systems p 34 A89-26960
Information capacity of associative memories p 20 A89-39600
VLSI architectures for pattern analysis and image database management p 20 N84-19163
Functional and database architecture design [AF-A136275] p 3 N84-19169
Open systems interconnection for the defence community p 20 N84-21426
Future database machine architectures [AD-A146786] p 22 N85-16481
General design considerations of an Air Force information system [AD-A150611] p 7 N85-23449
Design and implementation of an intelligence database [AD-A154095] p 70 N85-30973
Information technology R and D Critical trends and issues [PB85-245860] p 10 N86-19960
A design methodology for on-line menu-driven information retrieval systems p 96 N86-24558
Data Base Management: Proceedings of a conference [AD-A158285] p 85 N86-25999
Access control and privacy in large distributed systems [NASA-TM-89397] p 110 N86-29568
Space operations. NASA's use of information technology. Report to the Chairman, Committee on Science, Space and Technology [GAO/IMTEC-87-20] p 11 N87-22551
Towards a tribology information system The results of a Planning Workshop held at the National Bureau of Standards, July-August 1985 [PB88-168604] p 26 N88-21448
Application of new technologies to DTIC document processing [AD-A189778] p 99 N88-22823
Computer architectures for very large knowledge bases p 41 N89-12294
Design and implementation of a controller and a host simulator for a relational replicated database system [AD-A198951] p 28 N89-14176
Information resource management An architectural concept/experience [DE88-015184] p 86 N89-14177
The NC (Numerically Controlled) assistant: Interfacing knowledge based manufacturing tools to CAD/CAM systems [DE88-016742] p 42 N89-14709
The computational structural mechanics testbed architecture Volume 2 The interface [NASA-CR-178386] p 76 N89-15435
Users manual for the Research Notes System (Version 1.5) [DE89-001391] p 87 N89-15787
A database management capability for Ada p 77 N89-16371
Proceedings of the Workshop on AI (Artificial Intelligence), and Distributed Problem Solving [PB88-224852] p 44 N89-16400
ATF (Advanced Toroidal Facility) data management [DE89-001872] p 77 N89-16486
An architecture for integrating distributed and cooperating knowledge-based Air Force decision aids p 44 N89-19841
Increasing user-friendliness in AI systems [DE89-005093] p 56 N89-20704
The computational structural mechanics testbed architecture Volume 2 Directives [NASA-CR-178385] p 78 N89-22133
A project for developing a linear algebra library for high-performance computers [DE89-007501] p 78 N89-22374
- A new approach to system testing [DE89-008660] p 30 N89-23195
Engineering Graphics System (EGS) user's manual [DE89-008668] p 79 N89-23199
Compiling high level constructs to distributed memory architectures [NASA-CR-181825] p 30 N89-24058
A visual object-oriented unification system [AD-A206228] p 30 N89-24068
An architecture for heuristic control of real-time processes p 57 N89-26470
A multimedia database management system supporting contents search in media data [AD-A207070] p 103 N89-26780
Approaching distributed database applications using a programmable terminal emulator [DE89-014831] p 31 N89-28308
Conversion of mass storage hierarchy in an IBM computer network [AD-A208520] p 31 N89-28330
Problems and solutions in online documentation systems [DE89-014092] p 80 N89-28447
Security concepts for microprocessor based key generator controllers [AD-A155194] p 111 N85-74069
- ARMED FORCES (UNITED STATES)**
IBM's token-ring LAN (Local-Area Network) A base-level communications solution [AD-A143446] p 21 N84-33063
Information systems plan [AD-A157911] p 84 N86-13227
Automated Information Management Technology (AIM-TECH): Considerations for a technology investment strategy [AD-A161139] p 38 N86-20173
IMS: Integrated Maintenance Information System. A maintenance information delivery concept p 85 N88-17207
The Engineer Studies Center guide to research and data collection [AD-A189971] p 13 N88-23680
Management and the executive [AD-A190778] p 86 N88-25374
Planning and controlling the acquisition costs of Air Force information systems [AD-A204421] p 16 N89-22528
- ARRAYS**
Content-Addressable Memory manager Design and evaluation [AD-A164037] p 23 N86-25133
- ARTIFICIAL INTELLIGENCE**
Intelligent interfaces for human control of advanced automation and smart systems p 47 A86-21889
Artificial intelligence - New tools for aerospace project managers p 32 A86-34966
An architecture for intelligent interfaces - Outline of an approach to supporting operators of complex systems p 48 A87-16818
The development of an intelligent user interface for NASA's scientific databases p 48 A87-28445
Issues and themes in information science and technology [AIAA PAPER 87-1661] p 1 A87-31113
1988 Goddard Conference on Space Applications of Artificial Intelligence, Greenbelt, MD, May 24, 1988, Proceedings p 33 A89-21801
Artificial intelligence costs, benefits, and risks for selected spacecraft ground system automation scenarios p 33 A89-21803
The second generation intelligent user interface for the crustal dynamics data information system — for NASA space missions p 34 A89-21810
Automated cataloging and characterization of space-derived data p 91 A89-21912
Interdisciplinary study on artificial intelligence [AD-A131359] p 35 N84-11819
Artificial intelligence implications for information retrieval [AD-A131382] p 35 N84-11821
Research on interactive acquisition and use of knowledge [AD-A131306] p 35 N84-11823
Machine learning Part 1 A historical and methodological analysis [AD-A131424] p 36 N84-11824
Inquiry semantics A functional semantics of natural language grammar [AD-A135153] p 36 N84-17929
Research on interactive acquisition and use of knowledge [AD-A137436] p 36 N84-20270
A natural language interface for a PROLOG database [AD-A138071] p 51 N84-22254

- The advantages of abstract control knowledge in expert system design
[AD-A139978] p 36 N84-25370
- Implications of artificial intelligence for a user defined technical information system
[AD-P003938] p 37 N85-11618
- Intelligent information retrieval from on-line technical documentation
[AD-P003946] p 37 N85-11626
- Memory-based expert systems
[AD-A145612] p 37 N85-11628
- Knowledge representation and natural-language semantics
[AD-A146025] p 37 N85-12615
- Information technology R and D Critical trends and issues
[PB85-245660] p 10 N86-19960
- Automated Information Management Technology (AIM-TECH). Considerations for a technology investment strategy
[AD-A161139] p 38 N86-20173
- Man-machine systems of the 1990 decade Cognitive factors and human interface issues
[AD-A163865] p 52 N86-25123
- Data Base Management. Proceedings of a conference
[AD-A158285] p 85 N86-25999
- The role of databases in knowledge-based systems
[AD-A166365] p 38 N86-30573
- Remote Sensing Information Sciences Research Group, Santa Barbara Information Sciences Research Group, year 3
[NASA-CR-179769] p 72 N86-32863
- Knowledge-based load leveling and task allocation in human-machine systems
p 53 N86-32865
- Distributed knowledge base systems for diagnosis and information retrieval
[AD-A170630] p 38 N87-15025
- Proceedings of the 2nd Conference on Computer Interfaces and Intermediates for Information Retrieval
[AD-A174000] p 53 N87-16657
- The development of a prototype intelligent user interface subsystem for NASA's scientific database systems
[NASA-TM-87821] p 53 N87-24098
- Artificial intelligence developments re: DOD Gateway Information System (DGIS) and Defense Applied Information Technology Center (DAITC)
[AD-A181101] p 111 N87-27550
- DTIC (Defense Technical Information Center) model action plan for incorporating DGIS (DOD Gateway Information System) capabilities
[AD-A181102] p 98 N87-27551
- Advanced techniques for the storage and use of very large, heterogeneous spatial databases. The representation of geographic knowledge. Toward a universal framework — relations (mathematics)
[NASA-CR-181517] p 39 N88-12421
- DOD Gateway Information System (DGIS) common command language. The first prototyping and the decision for artificial intelligence
[AD-A185950] p 39 N88-15725
- The intelligent user interface for NASA's advanced information management systems
p 39 N88-16424
- Knowledge retrieval as specialized inference
[AD-A189042] p 39 N88-20899
- The Scientific and Technical Information Network (STINET). Foundation for evolution
[AD-A189750] p 99 N88-22822
- A shared-world conceptual model for integrating space station life sciences telepresence operations
p 55 N88-30333
- The second generation intelligent user interface for the crustal dynamics data information system
p 40 N88-30352
- Automated cataloging and characterization of space-derived data
p 13 N88-30354
- Information retrieval systems evolve—advances for easier and more successful use
p 100 N88-30462
- Deep space network resource scheduling approach and application
p 86 N89-10070
- Space station Platform Management System (PMS) replanning using resource envelopes
p 86 N89-10071
- Knowledge base maintenance using logic programming methodologies
p 42 N89-12295
- SHePS considered as a fully intensional propositional semantic network
p 27 N89-13184
- Planner system for the application of indications and warning
p 42 N89-13188
- Intelligent data management
p 86 N89-13913
- Artificial intelligence techniques for retrospective help in data analysis
p 42 N89-13915
- BIOMASSCOMP. Artificial neural networks and neurocomputers
[AD-A200902] p 44 N89-19123
- Use of artificial intelligence in supervisory control
p 44 N89-20694
- Increasing user-friendliness in AI systems
[DE89-005093] p 56 N89-20704
- The DoD Gateway Information System (DGIS) The development toward artificial intelligence and hypermedia in common command language
[AD-A203674] p 102 N89-20869
- Fostering interaction of government, defense, and aerospace databases
p 103 N89-23374
- On designing a case-based system for expert process development
p 45 N89-24847
- The 1989 Goddard Conference on Space Applications of Artificial Intelligence
[NASA-CP-30333] p 45 N89-26578
- Shared resource control between human and computer
p 57 N89-26580
- A rapid prototyping/artificial intelligence approach to space station-era information management and access
p 46 N89-26600
- ARTIFICIAL SATELLITES**
Guidelines for submitting data to the National Space Science Data Center
[NASA-TM-87500] p 23 N86-15209
- ASSESSMENTS**
Measuring the value of information and information systems, services and products
p 97 N86-28799
- Risk assessment of compressed natural gas-fueled vehicle operations, phase 1
[PB89-188841] p 104 N89-27196
- ASSOCIATIVE PROCESSING (COMPUTERS)**
Information capacity of associative memories
p 20 A89-39600
- Content-Addressable Memory manager. Design and evaluation
[AD-A164037] p 23 N86-25133
- ASSURANCE**
Assurance Program for Remedial Action (APRA) microcomputer-operated bibliography management system
[DE85-008763] p 95 N86-16155
- ASTRONAUTS**
The station is raising lots of questions about space law
p 113 A87-34597
- ASTRONOMICAL CATALOGS**
A library collection of software documentation specific to astronomical data reduction
p 91 A89-27235
- ASTRONOMICAL OBSERVATORIES**
NASA astrophysical data system (ADS) study
p 81 A89-27239
- ASTRONOMICAL SATELLITES**
Astronomical data analysis from remote sites
p 3 A89-27210
- ASTRONOMICAL SPECTROSCOPY**
A multi-spectral analysis system using 'atabases --- from satellite and groundbased observations
p 58 A89-27177
- ASTROPHYSICS**
Introduction to the Space Physics Analysis Network (SPAN)
[NASA-TM-86499] p 22 N85-24198
- ATMOSPHERIC COMPOSITION**
Development of a micrometeorological and tracer data archive
[PB87-110490] p 73 N87-19845
- ATMOSPHERIC MODELS**
Meteorological processor for regulatory models (MPRM-1.1) user's guide
[PB89-127526] p 78 N89-22188
- AUDITORY PERCEPTION**
Design of graphic displays in computerized systems
[AD-A161890] p 71 N86-24227
- AUDITORY SIGNALS**
Interactive activation models of perception and comprehension
[AD-A161362] p 52 N86-21143
- AUTOMATA THEORY**
Management of complex information in support of evolving autonomous expert systems
[AD-A186680] p 39 N88-17337
- Information processing resources management
[NASA-TM-87468] p 17 N85-72768
- AUTOMATED PILOT ADVISORY SYSTEM**
Cockpit information management through an intelligent pilot/vehicle interface
[AIAA PAPER 89-2098] p 50 A89-49456
- AUTOMATIC CONTROL**
Fallible humans and vulnerable systems - Lessons learned from aviation
p 50 A88-46511
- Artificial intelligence costs, benefits, and risks for selected spacecraft ground system automation scenarios
p 33 A89-21803
- Local automation model. System specification
[AD-A141503] p 92 N84-29798
- Microcomputer-based local automation model. Functional description
[AD-A160610] p 95 N86-19002
- Automated Information Management Technology (AIM-TECH). Considerations for a technology investment strategy
[AD-A161139] p 38 N86-20173
- Microcomputer-based local automation model. System planning guidance
[AD-A168136] p 98 N87-11630
- Planning actions in robot automated operations
p 43 N89-15559
- Automated knowledge base development from CAD/CAE databases
p 43 N89-15585
- An architecture for integrating distributed and cooperating knowledge-based Air Force decision aids
p 44 N89-19841
- Automated library systems and document tracking systems. Commercial software alternatives, volume 1 [D83-007716] p 102 N89-21706
- GSA automated information security
[PMS-P-2100 1-CHGE-1] p 111 N85-72106
- AUTOMATIC PILOTS**
Fallible humans and vulnerable systems - Lessons learned from aviation
p 50 A88-46511
- AUTOMATIC TEST EQUIPMENT**
A systems approach to ATE documentation
p 62 A85-26824
- AUTOTESTCON '88**, Proceedings of the IEEE International Automatic Testing Conference, Minneapolis, MN, Oct. 4-6, 1988
p 33 A89-17998
- AUTOMATION**
The Flight Service Automation System
p 46 A84-44751
- FANS - A U.S. perspective
p 1 A87-11807
- AUTOTESTCON '88**, Proceedings of the IEEE International Automatic Testing Conference, Minneapolis, MN, Oct. 4-6, 1988
p 33 A89-17998
- The retrieval expert model of information retrieval
p 37 N85-25003
- Efforts at office automation and information systems utilization at Martin Marietta Energy Systems, Incorporated
[DE85-008154] p 8 N85-28633
- FLA: Data/data base administration analysis
[AD A153031] p 8 N85-28879
- Off to automation. The administrative window into the integrated DBMS
p 9 N86-15174
- AUTONOMOUS NAVIGATION**
An approach to autonomous attitude control for spacecraft
[AAS PAPER 88-004] p 33 A89-20833
- AVIONICS**
Integrated Terrain Access/Retrieval System
p 62 A85-44992
- Avionics Data Base users manual
[AD-A153810] p 69 N85-28942

B

BATCH PROCESSING

General specifications for the development of a USL NASA PC R and D statistical analysis support package
[NASA-CR-184537] p 15 N89-14977

BIAS

A contextual postprocessing expert system for English sentence reading machines
[AD-A163951] p 96 N86-26026

BIBLIOGRAPHIES

Experience, methods and prospects in commercial online materials data distribution
p 63 A87-13182

Annotated bibliography of human factors laboratory reports (1945-1968) Supplement 4, 1979-1983
[AD-A142141] p 51 N84-29481

Economic value of consumer information. A selected, annotated bibliography
[PB84-235785] p 7 N85-13873

Post-processing of bibliographic citations from DOE/Recon, NASA/Recon, and DOD/DROLS
[DE85-000617] p 93 N85-20938

Management. A bibliography for NASA managers
[NASA-SP-7500(19)] p 83 N85-26439

Compilation of abstracts of theses submitted by candidates for degrees
[AD-A151722] p 83 N85-27739

Annotated bibliography of publications dealing with occupational health and medical information systems, cost analysis procedures, evaluation methodology and related legal issues
[AD-A156650] p 94 N86-11078

A user's guide for the BIBSORT program for the IBM-PC personal computer
[AD-A157936] p 94 N86-12995

Integrated bibliographic information system. Integrating resources by integrating information technologies
[AD-A157700] p 95 N86-15211

Sandia computerized shock compression bibliographical database [DE85-018542] p 70 N86-17222

Bibliographic post-processing with the TIS Intelligent Gateway Analytical and communication capabilities [DE85-018153] p 95 N86-18245

Microcomputer-based local automation model Functional description [AD-A160610] p 95 N86-19002

The integrated bibliographic information system Resource sharing tailored for local needs [AD-A161700] p 95 N86-21431

Description of a tentative US-USSR common communication format [DE86-004676] p 96 N86-25681

Management. A bibliography for NASA Managers [NASA-SP-7500(20)] p 85 N86-27108

Bibliographic networks and microcomputer applications for aerospace and defense scientific and technical information p 98 N87-19923

Management. A bibliography for NASA managers (supplement 21) [NASA-SP-7500(21)] p 85 N87-20833

Bibliography on information resources management [PB87-185997] p 12 N87-28458

Management and the executive [AD-A190778] p 86 N88-25374

REFREEE Bibliographic database manager, documentation [PB88-200787] p 100 N89-11620

Bibliographic coupling among scientific papers in biological research specialties p 103 N89-25771

BIOLOGICAL MODELS (MATHEMATICS)

The model human processor - An engineering model of human performance p 49 A87-33532

BIOMASS

NASA pilot land data system p 68 N84-31741

BIOMEDICAL DATA

Annotated bibliography of publications dealing with occupational health and medical information systems, cost analysis procedures, evaluation methodology and related legal issues [AD-A156650] p 94 N86-11078

BIOMETRICS

Computer resource management technology program (PE 64740F) Task no 9 Advanced user authentication [PB88-183066] p 111 N88-25163

BIOPROCESSING

An expert system based intelligent control scheme for space bioreactors p 44 N89-20285

BIOREACTORS

An expert system based intelligent control scheme for space bioreactors p 44 N89-20285

BIOSPHERE

Concept for a satellite-based global reserve monitoring system p 66 A89-41152

BOOLEAN FUNCTIONS

EPALIT. A data management system applied to the control and retrieval of technical reports [PB85-193068] p 94 N85-35828

BRAIN

Interdisciplinary study on artificial intelligence [AD-A131359] p 35 N84-11819

Three-dimensional computer graphics brain-mapping project [AD-A197053] p 41 N89-11435

BROADBAND

Lewis Information Network (LINK) Background and overview [NASA-TM-100162] p 25 N88-11925

BUDGETING

The crisis in space and earth science. A time for a new commitment [NASA-TM-101290] p 17 N89-70676

C

C (PROGRAMMING LANGUAGE)

Text compression using word tokenization [DE86-000832] p 95 N86-19260

The DoD Gateway Information System (DGIS) The development toward artificial intelligence and hypermedia in common command language [AD-A203674] p 102 N89-20869

An asynchronous interface between a natural language query interpreter and a database management system [AD-A206918] p 57 N89-26779

CALIBRATING

NASA meteorology information system. A NEMS subsystem p 68 N84-33279

CARBON DIOXIDE

Carbon Dioxide Information Center FY 1985 [DE86-004654] p 72 N86-26245

CASE HISTORIES

On designing a case-based system for expert process development p 45 N89-24847

CATALOGS

Space station integrated propulsion and fluid systems study [NASA-CR-179393] p 75 N89-12581

CATALOGS (PUBLICATIONS)

Notes for medical catalogs, 1983 [PB84-195874] p 6 N84-33296

CHALLENGER (ORBITER)

The investigative techniques used by the Challenger Commission to address information system failures as they related to the Space Shuttle accident p 58 A88-46509

CHANNEL CAPACITY

Information and stochastic systems [AD-A192167] p 26 N88-24838

CHARACTER RECOGNITION

A contextual postprocessing expert system for English sentence reading machines [AD-A163951] p 96 N86-26026

Application of new technologies to DTIC document processing [AD-A189778] p 99 N88-22823

BIOMASSCOMP Artificial neural networks and neurocomputers [AD-A200902] p 44 N89-19123

CHIPS (MEMORY DEVICES)

Content-Addressable Memory manager Design and evaluation [AD-A164037] p 23 N86-25133

CIRCUITS

Optical Information Processing for Aerospace Applications 2 [NASA-CP-2302] p 67 N84-22402

CITIES

An intermediary's perspective of online databases for local governments p 90 A85-24549

CLASSICAL MECHANICS

The computational structural mechanics testbed architecture Volume 1 The language [NASA-CR-178384] p 76 N89-14472

The computational structural mechanics testbed architecture Volume 4 The global-database manager GAL-DBM [NASA-CR-178387] p 76 N89-16195

CLASSIFICATIONS

Using bar code technology to enhance classified document accountability [DE87-000760] p 98 N87-21739

The language of data. A general theory of data p 86 N89-13912

Bibliographic coupling among scientific papers in biological research specialties p 103 N89-25771

Using bar code technology to enhance classified document accountability p 112 N88-70733

CLIMATE

Data set management p 24 N86-29285

University participation via UNIDATA, part 1 p 72 N86-29295

University participation via UNIDATA, part 2 p 72 N86-29296

Network access to PCDS (SPAN, ESN, SESNET, ARPANET) p 24 N86-29297

Methods of downloading to user institutions p 24 N86-29298

CLIMATOLOGY

The pilot climate data system p 63 A86-20669

CLINICAL MEDICINE

Test and Evaluation Master Plan (TEMP) for the Navy Occupational Health Information Management System (NOHIMS) Phase 1 Appendix A through appendix U [AD-A154179] p 84 N85-30967

Annotated bibliography of publications dealing with occupational health and medical information systems, cost analysis procedures, evaluation methodology and related legal issues [AD-A156650] p 94 N86-11078

CLUSTER ANALYSIS

Bibliographic coupling among scientific papers in biological research specialties p 103 N89-25771

COASTS

Technology transfer for development of coastal zone resources Caribbean experts examine critical issues p 77 N89-18749

COCKPITS

Flight stations and offices of the future - How similar will they be p 46 A84-19282

Advanced helicopter cockpit information management p 49 A88-35376

Human factors impact on the V-22 Osprey cockpit development - An overview p 50 A89-18865

Cockpit information management through an intelligent pilot/vehicle interface [AIAA PAPER 89-2098] p 50 A89-49456

Aeronautical decision making Cockpit resource management [AD-A205115] p 61 N89-22327

CODING

A model for the containment of computer viruses [AIAA PAPER 86-2759] p 105 A87-18853

Keeping track of archived drawings. A case study [DE86-003129] p 71 N86-24572

Using bar code technology to enhance classified document accountability [DE87-000760] p 98 N87-21739

COGNITION

Metaphor and common sense reasoning [AD-A131423] p 35 N84-11756

The advantages of abstract control knowledge in expert system design [AD-A139978] p 36 N84-25370

Man-machine systems of the 1990 decade Cognitive factors and human interface issues [AD-A163865] p 52 N86-25123

Experiments on the cognitive aspects of information seeking and information retrieving [PB87-157699] p 38 N87-24238

A hypertext writing environment and its cognitive basis [AD-A188179] p 54 N88-18298

A personalized and prescriptive decision aid for choice from a database of options [AD-A188726] p 59 N88-20820

COLLATING

Design of a scientific information collation and dissemination system, volumes 1 thru 3 [AD-A146002] p 69 N85-12791

COLLECTION

Microcomputer-based local automation model Functional description [AD-A160610] p 95 N86-19002

COLUMBUS SPACE STATION

Information systems for the Space Station ERA p 101 N89-18758

COMMAND AND CONTROL

Evaluation of expert systems - An approach and case study ... of determining software functional requirements for command management of satellites p 48 A87-16716

The EOS data and information system - Concepts for design p 65 A89-31939

Automated Information Management Technology (AIM-TECH) Considerations for a technology investment strategy [AD-A161139] p 38 N86-20173

An evaluation methodology for dependable multiprocessors [AD-A192799] p 26 N88-26863

Automation of spacecraft control centers p 86 N89-10078

COMMAND LANGUAGES

DOD Gateway Information System (DGIS) common command language Prolog knowledge base profile Common command language report no 3 [AD-A186150] p 99 N88-16574

COMMERCE

Integrating distributed homogeneous and heterogeneous databases Prototypes, volume 3 [AD-A195852] p 27 N89-10668

COMMUNICATING

Strategies and mechanisms for the diffusion of scientific and technical information. A comparative study p 2 N84-23406

The role of information technology in emergency management [GPO-29-457] p 69 N84-34319

Planetary Data Workshop, part 2 [NASA-CP-2343-PT-2] p 69 N84-34376

Networking p 21 N84-34381

COMMUNICATION

Office automation. A look beyond word processing [AD-A132764] p 36 N84-28670

White paper on new international satellite systems [PB85-162501] p 8 N85-27127

Description of a tentative US-USSR common communication format [DE86-004676] p 96 N86-25681

Technology transfer primer [PB86-205341] p 73 N87-12404

COMMUNICATION EQUIPMENT

EASCON '84, Proceedings of the Seventeenth Annual Electronics and Aerospace Conference, Washington, DC, September 10-12, 1984 p 1 A86-21876

Report on US domestic and international telecommunications and information markets [PB84-66362] p 21 N84-27602

Integration of communications with the Intelligent Gateway Processor [DE87-002386] p 25 N87-10981

Information and stochastic systems [AD-A192167] p 26 N88-24838

COMMUNICATION NETWORKS

- Multi-level security for computer networking - SAC digital network approach p 18 A85-14469
- EASCON '84; Proceedings of the Seventeenth Annual Electronics and Aerospace Conference, Washington, DC, September 10-12, 1984 p 1 A86-21876
- Knowledge-based network operations p 34 A89-33679
- Open systems interconnection for the defence community p 20 N84-21426
- The Pilot Land Data System: Report of the Program Planning Workshops [NASA-TM-86250] p 67 N84-26468
- IBM's token-ring LAN (Local-Area Network): A base-level communications solution [AD-A143446] p 21 N84-33063
- Introduction to the Space Physics Analysis Network (SPAN) [NASA-TM-86499] p 22 N85-24198
- Future information technology, 1994. Telecommunications [NBS/SP-500/119] p 22 N85-27762
- Telecommunications alternatives for federal users. Market trends and decisionmaking criteria [PB86-153764] p 23 N86-25687
- Integrating images, applications, and communications networks, volume 5 [AD-A195854] p 26 N88-30452
- Functional description and formal specification of a generic gateway [AD-A206581] p 31 N89-26776
- Protocol interoperability between DDN and ISO (Defense Data Network and International Organization for Standardization) protocols [AD-A206582] p 31 N89-26777
- COMMUNICATION THEORY
- Man-machine systems of the 1990 decade: Cognitive factors and human interface issues [AD-A163665] p 52 N86-25123
- COMMUNITIES
- Microcomputer-based detachment administrative management system for the LAMPS (Light Airborne Multi-Purpose System) community. A requirements analysis [AD-A162366] p 65 N86-24552
- COMPATIBILITY
- Capitalizing on experience with intelligence gateway software [AD-A193362] p 99 N88-27971
- COMPONENTS
- Space station integrated propulsion and fluid systems study [NASA-CR-179333] p 75 N89-12581
- COMPUTATION
- NASA-wide standard administrative systems p 82 N84-21415
- The role of working memory in language comprehension [AD-A192721] p 54 N88-26805
- Application developer's tutorial for the CSM testbed architecture [NASA-CR-181732] p 60 N89-14473
- The computational structural mechanics testbed architecture. Volume 2 The interface [NASA-CR-178386] p 76 N89-15435
- The computational structural mechanics testbed architecture. Volume 4 The global-database manager GAL-DBM [NASA-CR-178387] p 76 N89-16195
- Research and development strategy for high performance computing [PB89-120778] p 62 N89-70498
- COMPUTATIONAL FLUID DYNAMICS
- Cumulative reports and publications through December 31, 1988 [NASA-CR-181784] p 16 N89-20619
- COMPUTER AIDED DESIGN
- Why solid modeling? — in automated CAD/CAM p 32 A85-18437
- Human factors of intelligent computer aided display design p 47 A87-12216
- Integrated structural analysis for rapid design support p 18 A88-18630
- The specification and design of a system using computer-aided software engineering and performance analysis tools [AIAA PAPER 88-4410] p 19 A88-51934
- A data-base management scheme for computer-aided control engineering p 33 A88-54484
- Data base system considerations in engineering design p 19 A89-12177
- An aide for instruction on integrated engineering design and support p 50 A89-12179
- An integrated data base management system for engineering applications based on an extended relational model p 19 A89-12181

- Developments in interdisciplinary simulation and design software for mechanical systems p 19 A89-26248
- The Transportable Applications Environment: An interactive design-to-production development system p 50 A89-29067
- Digital mockup — airplane design and production using computer techniques [AIAA PAPER 89-2086] p 66 A89-49447
- The database management system: A topic and a tool p 4 NA-22316
- A model for graphics interface tool development p 70 N85-34545
- Investigation of air transportation technology at Princeton University, 1983 p 38 N87-18528
- The impact of information technology on research in science and engineering [DE88-000342] p 13 N88-12417
- The Environment for Application Software Integration and Execution (EASIE), version 1.0 Volume 2: Program integration guide [NASA-TM-100574] p 60 N89-13995
- The NC (Numerically Controlled) assistant: Interfacing knowledge based manufacturing tools to CAO/CAM systems [DE88-016742] p 42 N82-14709
- Automated knowledge base development from CAD/CAE databases p 43 N89-15585
- Redesign: A data dictionary with relational database design capabilities in Ada p 43 N89-16368
- A database management system for computer-aided digital circuit design [AD-A206047] p 79 N89-24066
- TRUSS An intelligent design system for aircraft wings p 79 N89-25182
- A large scale software system for simulation and design optimization of mechanical systems p 30 N89-25219
- COMPUTER AIDED MANUFACTURING
- Why solid modeling? — in automated CAD/CAM p 32 A85-18437
- Digital mockup — airplane design and production using computer techniques [AIAA PAPER 89-2086] p 66 A89-49447
- The database management system: A topic and a tool p 4 NA-22316
- The NC (Numerically Controlled) assistant: Interfacing knowledge based manufacturing tools to CAO/CAM systems [DE88-016742] p 42 N89-14709
- A database approach to computer integrated manufacturing [AD-A201030] p 16 N89-18088
- Computer-aided fabrication system implementation [AD-A203651] p 88 N89-21576
- COMPUTER AIDED MAPPING
- Integrated Terrain Access/Retrieval System p 62 A85-44992
- A model for graphics interface tool development p 70 N85-34545
- Reference model for DBMS (database management system) standardization [PB85-225217] p 9 N86-16923
- COMPUTER ASSISTED INSTRUCTION
- Annotated bibliography of human factors laboratory reports (1945-1988). Supplement 4, 1979-1983 [AD-A142141] p 51 N84-29481
- Examining learning theory of online information retrieval systems and applications in computer-aided instruction Implications for the Defense Technical Information Center's computer-aided instruction [AD-A159001] p 38 N86-15213
- Advanced Technology Unit Training and Management System (ATUTMS) User's guide p 71 N86-22130
- Development of a computer-managed readiness assessment system [AD-A162931] p 71 N86-24215
- IMIS Integrated Maintenance Information System: A maintenance information delivery concept p 85 N88-17207
- Computer-aided writing [AD-A192516] p 54 N88-26837
- OFMTutor An operator function model intelligent tutoring system p 56 N89-20696
- A survey of intelligent tutoring systems: Implications for complex dynamic systems p 56 N89-20697
- COMPUTER DESIGN
- Design, test, and evaluation of an Air Force environmental model and data exchange [AD-A143226] p 68 N84-33060
- COMPUTER GRAPHICS
- Why solid modeling? — in automated CAD/CAM p 32 A85-18437
- An approach to user specification of interactive display interfaces p 47 A85-43401
- The pilot climate data system p 63 A86-20669

COMPUTER INFORMATION SECURITY

- Computer-Output Microfiche (COM) on the Oak Ridge computer network [DE84-002422] p 92 N84-15836
- Planetary Data Workshop, part [NASA-CP-2343-PT-2] p 69 N84-34376
- A model for graphics interface tool development p 70 N85-34545
- Design of graphic [AD-A161890] p 71 N86-24227
- Keeping track of er [DE86-003129] p 71 N86-24577
- User interface design: two dimensional polygonally encoded geological survey maps [AD-A170812] p 53 N87-13840
- Three-dimensional computer graphics brain-mapping project [AD-A197053] p 41 N89-11435
- Computer Science and Statistics. Proceedings of the 18th Symposium on the Interface [AD-A191296] p 26 N89-13901
- Tools for data analysis management p 80 N89-13919
- Statistically sophisticated software and DINDE p 28 N89-13920
- DEC Ada interface to Screen Management Guidelines (SMG) p 101 N89-16303
- GRAPS (Graphical Plotting System) user's guide. A graphical plotting system for displaying scientific and engineering data [AD-A202583] p 77 N89-21559
- Engineering Graphics System (EGS) user's manual [DE89-000668] p 79 N89-23199
- A large scale software system for simulation and design optimization of mechanical systems p 30 N89-25219
- An implementation of a data definition facility for the graphics language for database [AD-A207380] p 89 N89-28442
- COMPUTER INFORMATION SECURITY
- Multi-level security for computer networking - SAC digital network approach p 18 A85-14469
- Security implications of the Space Station information system p 104 A85-42593
- Potential uses of probabilistic risk assessment techniques for space station development p 104 A85-42595
- Key considerations in contingency planning for secure space flight ground control centers p 105 A85-42596
- A systematic method for evaluating security requirements compliance p 105 A85-42597
- Restricted access processor: An application of computer security technology p 105 A85-42600
- Aerospace Computer Security Conference, 2nd, McLean, VA, December 2-4, 1986, Technical Papers p 105 A87-18852
- A model for the containment of computer viruses [AIAA PAPER 86-2759] p 105 A87-18853
- Integrity mechanisms in a secure UNIX - Gould UTX/32S [AIAA PAPER 86-2761] p 105 A87-18854
- A practical design for a multilevel secure database management system [AIAA PAPER 86-2771] p 106 A87-18855
- Multilevel data store design [AIAA PAPER 86-2772] p 106 A87-18856
- Secure database management system architectural analysis [AIAA PAPER 86-2773] p 106 A87-18857
- Good security practices for I/S networks [AIAA PAPER 86-2775] p 106 A87-18858
- Strawman Definition for the Space Station Information System Network Security [AIAA PAPER 86-2780] p 106 A87-18860
- Computer security acquisition management [AIAA PAPER 86-2774] p 106 A87-18863
- State-of-the-art in computer security for DoD space systems [AIAA PAPER 86-2778] p 107 A87-18864
- Computer security and user authentication - Old problems, new solutions [AIAA PAPER 86-2760] p 107 A87-18865
- Applying technology to systems, Aerospace Computer Security Conference, 3rd, Orlando, FL, Dec 7-11, 1987, Technical Papers p 107 A88-26209
- Space Station Program threat and vulnerability analysis [AIAA PAPER 87-3082] p 107 A88-26210
- The hack attack: Increasing computer system awareness of vulnerability threats [AIAA PAPER 87-3093] p 107 A88-26212
- Protecting sensitive systems and data in an open agency [AIAA PAPER 87-3092] p 107 A88-26213
- Information systems, security and privacy [RAND/P-6930] p 107 N84-21402

Guidelines for developing NASA (National Aeronautics and Space Administration) ADP security risk management plans [NASA-CR-173564] p 108 N84-26317

Guidelines for development of NASA (National Aeronautics and Space Administration) computer security training programs [NASA-CR-173562] p 108 N84-26318

Department of defense trusted computer system evaluation criteria [AD-A141304] p 108 N84-26498

Guideline for computer security certification and accreditation. Category: ADP (Automatic Data Processing) operations. Subcategory: Computer security. Federal information processing standards [FIPS-PUB-102] p 108 N84-30736

Guidelines for contingency planning NASA (National Aeronautics and Space Administration) ADP security risk reduction decision studies [PB84-189636] p 108 N84-30737

Fundamentals of computer security [DE84-011476] p 108 N84-31989

Computer crime [GPO-30-544] p 109 N85-19991

Computer and communications security and privacy [GPO-39-741] p 109 N85-21994

Security of personal computer systems. A management guide [PB85-161040] p 109 N85-24793

Future information technology, 1984 telecommunications [PB85-165850] p 22 N85-26173

Future information technology, 1984. Telecommunications [NBS/SP-500/119] p 22 N85-27762

NASA guidelines for assuring the adequacy and appropriateness of security safeguards in sensitive applications [NASA-CR-175489] p 109 N85-26593

Computer security policies [GPO-52-154] p 109 N86-15919

A process activity monitor for AOS/VS [NASA-TM-86535] p 109 N86-19950

A decision support system for cost-effectiveness analysis for control and security of computer systems [AD-A161388] p 58 N86-22134

Technology assessment: Methods for measuring the level of computer security [PB86-129954] p 110 N86-25140

Federal government information technology: Management, security and congressional oversight [PB86-205499] p 110 N87-12397

Guide to sharing personal computer resources via local area networks, revised [DE86-018068] p 25 N87-20772

Considerations in developing a comprehensive computer security support database system [DE87-005527] p 110 N87-23151

Elements of a proposed security methodology for networks of computers [DE87-006769] p 110 N87-23152

Livermore risk analysis methodology: A quantitative approach to management of the risk associated with the operation of information systems [DE87-006828] p 110 N87-24232

New technologies and intellectual property: An economic analysis [N-2601-NSF] p 114 N88-10695

Defending secrets, sharing data. New locks and keys for electronic information [PB88-143185] p 111 N88-20210

Monitoring the usage of a computer system [DE88-004310] p 111 N88-22542

Computer resource management technology program (PE 6-740F). Task no 9. Advanced user authentication [PB88-183066] p 111 N88-25163

An evaluation methodology for dependable multiprocessors [AD-A152799] p 26 N88-26863

Information technology resources long-range plan. FY90 to FY94 [DE89-007784] p 16 N89-22527

Secure distributed processing systems [AD-A134935] p 111 N84-73042

Guidelines for certification of existing sensitive systems [NASA-CR-174080] p 111 N85-70325

GSA automated information security [PMS-P-2100 I-CHGE-1] p 111 N85-72106

GSA automated information security [PMS-P-2100 I] p 111 N85-72650

Security concepts for microprocessor based key generator controllers [AD-A155194] p 111 N85-74089

The trusted function in secure decentralized processing [AD-A155252] p 111 N85-74267

Telecommunications security and privacy p 111 N85-74342

COMPUTER NETWORKS

Multi-level security for computer networking - SAC digital network approach p 18 A85-14469

Good security practices for I/S networks [AIAA PAPER 86-2775] p 108 A87-1885F

Strawman Definition for the Space Station Information System Network Security [AIAA PAPER 86-2780] p 108 A87-18860

Access control and privacy in large distributed systems [AIAA PAPER 86-2781] p 108 A87-18861

NASA space information systems overview [AIAA PAPER 87-2189] p 63 A87-48577

TIS: An intelligent gateway computer for information and modeling networks. Overview [DE83-017986] p 20 N84-14067

Computer-Output Microfiche (COM) on the Oak Ridge computer network [DE84-002422] p 92 N84-15836

Method for accessing distributed heterogeneous databases p 87 N84-21412

Open systems interconnection for the defence community p 20 N84-21426

Word processors in aerospace/defense information services: Use of distributed information systems by the Office of the Secretary of Defense p 4 N84-21429

Display units for online passage retrieval: A comparative analysis [DE84-001004] p 92 N84-25369

Fundamentals of computer security [DE84-011478] p 108 N84-31989

The creation of a central database on a microcomputer network [AD-A143875] p 21 N84-34326

Planetary Data Workshop, part 2 [NASA-CP-2343-PT-2] p 69 N84-34378

Networking p 21 N84-34381

Post-processing of bibliographic citations from DOE/Recon, NASA/Recon, and DOD/DROLS [DE85-006017] p 93 N85-20938

Introduction to the Space Physics Analysis Network (SPAN) [NASA-TM-86499] p 22 N85-24198

Network information management subsystem p 22 N85-27106

Information information networks for material properties. Revision 1 [DE85-007412] p 22 N85-27572

Access path optimization for network database retrieval p 94 N85-27749

Design of an interface to an information retrieval network p 94 N85-27750

Carbon Dioxide Information Center FY 1985 [DE86-004654] p 72 N86-26245

University participation via UNIDATA, part 2 p 72 N86-29296

Network access to PCDS (SPAN, ESN, SESNET, ARPANET) p 24 N86-29297

Methods of downloading to user institutions p 24 N86-29298

Access control and privacy in large distributed systems [NASA-TM-89397] p 110 N86-29568

Prototype material properties data network [NASA-TM-83243] p 24 N86-33208

Documentation of materials data for computer storage and retrieval [DE86-009509] p 72 N87-11493

Bibliographic networks and microcomputer applications for aerospace and defense scientific and technical information p 98 N87-19923

Integration of communications with the Intelligent Gateway Processor [DE87-002386] p 25 N87-19981

Toward highly portable database systems: Issues and solutions [AD-A174835] p 11 N87-20131

Considerations in developing a comprehensive computer security support database system [DE87-005527] p 110 N87-23151

Elements of a proposed security methodology for networks of computers [DE87-006769] p 110 N87-23152

The future of interstate networking [DE87-007912] p 25 N87-24116

Foundation. Transforming data bases into knowledge bases p 39 N88-16423

Guidelines for exchanging computerized information [DE88-004736] p 13 N88-10510

Knowledge-based integrated information systems engineering: Highlights and bibliography Knowledge-Based Integrated Information Systems Engineering (KBISE) Project, volume 1 [AD-A195850] p 40 N8C-30449

Integrating images, applications, and communications networks, volume 5 [AD-A195854] p 26 N88-30452

Knowledge-Based Integrated Information Systems Development Methodologies Plan. Knowledge-Based Integrated Information Systems Engineering (KBISE) report, volume 2 [AD-A195851] p 41 N88-30455

The Environment for Application Software Integration and Execution (EASIE), version 1.0. Volume 2: Program integration guide [NASA-TM-100574] p 60 N89-13995

Interactive access to scientific and technological factual databases worldwide [DE88-016172] p 100 N89-14943

Resident database interfaces to the DAVID system, a heterogeneous distributed database management system [NASA-CR-184615] p 87 N89-14946

General specifications for the development of a USL/DBMS NASA/PC R and D distributed workstation [NASA-CR-184538] p 15 N89-14978

A computer-based specification methodology p 101 N89-16301

The TAVERNS emulator: An Ada simulation of the space station data communications network and software development environment p 78 N89-16366

Space station Ada runtime support for nested atomic transactions p 77 N89-16375

Technology transfer report [DE89-009044] p 103 N89-23381

A large scale software system for simulation and design optimization of mechanical systems p 30 N89-25219

Protocol interoperability between DDN and ISO (Defense Data Network and International Organization for Standardization) protocols [AD-A206582] p 31 N89-26777

Conversion of mass storage hierarchy in an IBM computer network [AD-A206520] p 31 N89-28330

Secure distributed processing systems [AD-A134935] p 111 N84-73042

COMPUTER PROGRAM INTEGRITY

A model for the containment of computer viruses [AIAA PAPER 86-2759] p 105 A87-18853

Space Station Program threat and vulnerability analysis [AIAA PAPER 87-3082] p 107 A88-26210

The hack attack - increasing computer system awareness of vulnerability threats [AIAA PAPER 87-3093] p 107 A88-26212

Protecting sensitive systems and data in an open agency [AIAA PAPER 87-3092] p 107 A88-26213

Guidelines for developing NASA (National Aeronautics and Space Administration) ADP security risk management plans [NASA-CR-173564] p 108 N84-26317

Guideline for computer security certification and accreditation. Category: ADP (Automatic Data Processing) operations. Subcategory: Computer security. Federal information processing standards [FIPS-PUB-102] p 108 N84-30736

Security of personal computer systems. A management guide [PB85-161040] p 109 N85-24793

Technology assessment: Methods for measuring the level of computer security [PB86-129954] p 110 N86-25140

Elements of a proposed security methodology for networks of computers [DE87-006769] p 110 N87-23152

An experimental investigation into software reliability [AD-A206293] p 30 N89-24089

Guidelines for certification of existing sensitive systems [NASA-CR-174080] p 111 N85-70325

COMPUTER PROGRAMMING

Building maintainable large scale software systems - The measurable benefits of CASE technology [AIAA PAPER 89-5051] p 20 A89-48182

Inquiry semantics. A functional semantics of natural language grammar [AD-A135153] p 36 N84-17929

A natural language interface for a PROLOG database [AD-A138071] p 51 N84-22254

Strip and load data p 6 N84-33273

Memory-based expert systems [AD-A145612] p 37 N85-11628

- A user's guide for the BIBSORT program for the IBM-PC personal computer
[AD-A157836] p 94 N86-12995
- Technical overview of the information resource dictionary system
[PB85-224481] p 9 N86-18004
- Interactive activation models of perception and comprehension
[AD-A161362] p 52 N86-21143
- A contextual postprocessing expert system for English sentence reading machines
[AD-A163651] p 96 N86-26026
- KREME (Knowledge Representation, Editing and Modeling Environment): A user's introduction, phase 1
[AD-A186008] p 39 N86-20052
- Object-oriented approach to integrating database semantics, volume 4
[AD-A195853] p 41 N86-10672
- Software process modeling
[AD-A197137] p 27 N86-13154
- Multiple representation document development
[AD-A197366] p 76 N86-13305
- Fastbus standard routines
[DOE/ER-0367] r 29 N86-20645
- The Environment for Application Software Integration and Execution (EASIE) version 1.0 volume 1: Executive overview
[NASA-TM-100573] p 61 N86-21536
- Development of a Case III plus database for office automation within the Department of Logistics Management, School of Systems and Logistics
[AD-A202626] p 16 N86-22354
- Reusing structured models via model integration
[AD-A204652] p 30 N86-22369
- Structured requirements determination for information resources management
[AD-A204764] p 62 N86-22532
- A new approach to system testing
[DE89-006660] p 30 N86-23195
- A visual object-oriented unification system
[AD-A206226] p 30 N86-24066
- Approaching distributed database applications using a programmable terminal emulator
[DE89-014831] p 31 N86-26306
- Design considerations for human-computer dialogues
[AD-A158265] p 57 N86-70447
- COMPUTER PROGRAMS**
- Algorithm 607 - Text exchange system. A transportable system for management and exchange of programs and other text
p 16 A84-44325
- Evaluation of expert systems - An approach and case study - of determining software functional requirements for command management of satellites
p 46 A87-16716
- The Land Analysis System (LAS) - A general purpose system for multispectral image processing
p 64 A87-53230
- The Transportable Applications Environment - An interactive design-to-production development system
p 50 A89-29067
- Building maintainable large scale software systems - The measurable benefits of CASE technology
[AIAA PAPER 89-5051] p 20 A89-48162
- Videodisc premastering facility. Technical evaluation
[PB84-135821] p 20 N84-20840
- Development of a proposed standard for the exchange of scientific microcomputer programs
[PB84-157940] p 4 N84-24244
- Logical optimization for database uniformization
[NASA-CR-173636] p 5 N84-32262
- Effective organizational solutions for implementation of DBMS software packages
p 5 N84-33266
- User's guide for an IBM PL/I implementation of the international standard organization DIS 6211 information processing specification for a data descriptive file for information interchange
[ORNL/CSD-TM-207] p 6 N84-34188
- Archiving and exchange of a computerized marine seismic database. The ROSE data archive system
[DE84-001453] p 69 N85-13677
- Security of personal computer systems. A management guide
[PB85-161040] p 109 N85-24793
- Development of a user support package for CPESIM 2 (a computer simulation for CPE (Computer Performance Evaluation) use
[AD-A151899] p 22 N85-26170
- An analysis of data dictionaries and their role in information resource management
[AD-A152134] p 7 N85-27121
- Design and implementation of a personnel database
[AD-A159388] p 70 N86-16917
- Sandia computerized shock compression bibliographical database
[DE85-018542] p 70 N86-17222
- Technical overview of the information resource dictionary system
[PB85-224491] p 9 N86-18004
- Microcomputer-based local automation model: Functional description
[AD-A160610] p 95 N86-18002
- Keeping track of archived drawings: A case study
[DE86-003129] p 71 N86-24572
- Search and retrieval of office files using dBASE 3
[NASA-TM-86550] p 10 N86-30376
- Optical laser technology, specifically CD-ROM (Compact Disc - Read Only Memory) and its application to the storage and retrieval of information
[AD-A184111] p 74 N86-12086
- S-WI-adaptive data bases
[AD-A186414] p 26 N86-15729
- Computer-aided writing
[AD-A182516] p 54 N86-26837
- An evaluation methodology for dependable multiprocessors
[AD-A182709] p 26 N86-26863
- Walter user's manual (Version 1.0)
[AD-A182542] p 55 N86-26644
- Develop an automated Data Base Management System (DBMS): Report on DBMS software and user's guide
[DE86-015906] p 27 N86-10674
- Development and validation of an advanced low-order panel method
[NASA-TM-101024] p 75 N86-12554
- Implications of the language of data for computing systems
p 26 N86-13911
- Tools for data analysis management
p 60 N86-13919
- Statistically sophisticated software and DINDE
p 26 N86-13920
- General specifications for the development of a USL NASA PC R and D statistical analysis support package
[NASA-CR-184537] p 15 N86-14977
- On query processing in distributed database systems
p 61 N86-15774
- EDITSPEC: A FORTRAN 77 program for editing and manipulating spectral data from the Varian CAR-2390 U-VIS-NIR spectrophotometer
[AD-A200352] p 29 N86-16369
- ATF (Advanced Toroidal Facility) data management
[DE89-001672] p 77 N86-16466
- ISTAR evaluation
[AD-A201345] p 67 N86-19903
- GRAPS (Graphical Plotting System) user's guide. A graphical plotting system for displaying scientific and engineering data
[AD-A202583] p 77 N86-21559
- Computer-aided fabrication system implementation
[AD-A203651] p 68 N86-21576
- Hanford meteorological station computer codes. Volume 9: The quality assurance computer codes
[DE89-008414] p 78 N86-22295
- Link performance data management and analysis system users manual
[AD-A203605] p 61 N86-22356
- Planning and controlling the acquisition costs of Air Force information systems
[AD-A204421] p 16 N86-22528
- Simulation and analysis of physical mapping
[DE89-009399] p 56 N86-23196
- Microfilm and computer full text of archival documents
[AD-A204055] p 103 N86-23377
- An experimental investigation into software reliability
[AD-A206293] p 30 N86-24069
- Advanced computing systems. An advanced reasoning-based development paradigm for Ada trusted systems and its application to MACH
[AD-A206308] p 45 N86-24070
- A program interface prototype for a multimedia database incorporating images
[AD-A206439] p 45 N86-24226
- An asynchronous interface between a natural language query interpreter and a database management system
[AD-A206918] p 57 N86-26779
- The trusted function in secure decentralized processing
[AD-A155252] p 111 N85-74267
- COMPUTER STORAGE DEVICES**
- Beyond associations: Strategic components in memory retrieval
[AD-A160783] p 52 N86-18985
- An assessment of CD ROM (Compact Disk Read Only Memory)
[AD-A169259] p 72 N87-11492
- Electronic Records Administration at the Savannah River Plant
[DE87-014842] p 12 N88-12415
- The role of working memory in language comprehension
[AD-A192721] p 54 N88-26805
- Conversion of mass storage hierarchy in an IBM computer network
[AD-A208520] p 31 N89-26330
- Allocation strategies for APL on the CHP (configurable-highly parallel) computer
[AD-A203761] p 32 N89-70704
- Algorithm for supporting views in the microcomputer environment
[PB89-174155] p 32 N89-71248
- COMPUTER SYSTEMS DESIGN**
- The man-machine interface in computerized telemetry systems
p 46 A84-32429
- Interconnecting heterogeneous database management systems
p 18 A84-41197
- Restricted access processor - An application of computer security technology
p 105 A85-42600
- Aerospace Computer Security Conference, 2nd, McLean, VA, December 2-4, 1986, Technical Papers
p 105 A87-18852
- A practical design for a multilevel secure database management system
[AIAA PAPER 86-2771] p 106 A87-18855
- Access control and privacy in large distributed systems
[AIAA PAPER 86-2781] p 106 A87-18861
- Computer security and user authentication - Old problems, new solutions
[AIAA PAPER 86-2760] p 107 A87-18855
- Issues and themes in information science and technology
[AIAA PAPER 87-1661] p 1 A87-31113
- Management information system for engineering
[DE84-001855] p 81 N84-14984
- Human engineering guidelines for management information systems. Change 1
[AD-A137806] p 61 N84-21104
- Strip and load data
p 8 N84-33273
- The creation of a central database on a microcomputer network
[AD-A143875] p 21 N84-34326
- Planetary Data Workshop, part 2
[NASA-CP-2343-PT-2] p 69 N84-34376
- A model for graphics interface tool development
p 70 N85-34545
- Access control and privacy in large distributed systems
[NASA-TM-89397] p 110 N86-29568
- Toward highly portable database systems. Issues and solutions
[AD-A174635] p 11 N87-20131
- Design and development of a database for spectral data and analysis results
[DE87-011323] p 74 N86-11564
- Natural language query system design for interactive information storage and retrieval systems. Presentation visuals
[NASA-CR-184526] p 67 N89-14966
- General specifications for the development of a USL/DBMS NASA/PC R and D distributed workstation
[NASA-CR-184538] p 15 N89-14976
- Redesign: A data dictionary with relational database design capabilities in Ada
p 43 N89-16366
- Applying expertise to data in the Geologist's Assistant expert system
[DE89-003463] p 44 N89-20574
- National STI (Scientific and Technical Information) system of Egypt: Implementation
[PB84-181777] p 104 N84-74126
- COMPUTER SYSTEMS PERFORMANCE**
- Development of a user support package for CPESIM 2 (a computer simulation for CPE (Computer Performance Evaluation) use
[AD-A151899] p 22 N85-26170
- Future information technology, 1984 telecommunications
[PB85-165650] p 22 N85-26173
- The success or failure of management information systems. A theoretical approach
[DE87-007802] p 85 A7-74233
- Towards automated consulting. Design feedback from the performance of online documentation
[DE87-012243] p 49 N86-13082
- Standards conformance testing
[PB88-215645] p 14 N89-11412
- A project for developing a linear algebra library for high-performance computers
[DE89-007501] p 78 N89-22374
- A new approach to system testing
[DE89-006660] p 30 N89-23195
- Engineering Graphics System (EGS) user's manual
[DE89-009668] p 79 N89-23199
- Performance issues in management of the Space Station Information System
[NASA-CR-185409] p 88 N89-25773
- COMPUTER SYSTEMS PROGRAMS**
- The pilot climate data system
p 63 A86-20669

- Developments in interdisciplinary simulation and design software for mechanical systems p 19 A89-26248
- Building maintainable large scale software systems—The measurable benefits of CASE technology [AIAA PAPER 89-5051] p 20 A89-48162
- The software factory: A fourth generation software engineering environment — Book p 20 A89-48764
- Local automation model. System specification [AD-A141503] p 92 N84-29798
- Planetary Data Workshop, part 2 [NASA-CP-2343-PT-2] p 69 N84-34378
- Evaluative report on the Institute for Computer Sciences and Technology, National Bureau of Standards, fiscal year 1984 [PB85-178097] p 8 N85-31848
- The evaluation and extension of TAE in the development of a user interface management system p 53 N87-23153
- Capitalizing on experience with intelligence gateway software [AD-A193362] p 99 N88-27971
- Software process modeling [AD-A197137] p 27 N89-13154
- Monotonically improving approximate answers to relational algebra queries [NASA-CR-184874] p 61 N89-20717
- The Environment for Application Software Integration and Execution (EASIE) version 1.0 Volume 1. Executive overview [NASA-TM-100573] p 81 N89-21538
- COMPUTER SYSTEMS SIMULATION**
- The success or failure of management information systems: A theoretical approach [DE87-007802] p 85 N87-24233
- COMPUTER TECHNIQUES**
- Advanced human factors engineering tool technologies p 49 A88-35418
- Computer-Output Microfiche (COM) on the Oak Ridge computer network [DE84-002422] p 92 N84-15836
- Office automation: A look beyond word processing [AD-A132784] p 36 N84-28670
- Managing microcomputers. A survival kit for functional managers [AD-A144006] p 21 N84-34316
- Memory-based expert systems [AD-A145612] p 37 N85-11628
- A management workstation concept [AD-A145617] p 83 N85-11906
- Evaluating the appropriateness of microcomputers for litigation document management using the analytic hierarchy process p 69 N85-24788
- Design and implementation of a personnel database [AD-A159388] p 70 N86-16917
- Man-machine systems of the 1990 decade. Cognitive factors and human interface issues [AD-A163865] p 52 N86-25123
- A user's guide to the socioeconomic environmental demographic information system (SEEDIS) [AD-A166917] p 73 N87-12388
- Methods of eliciting information from experts [AD-A187488] p 54 N88-18189
- Advanced human factors engineering tool technologies [AD-A189390] p 54 N88-20825
- Computer-aided research [DE88-007771] p 54 N88-26114
- Computer-aided writing [AD-A192516] p 54 N88-26837
- The Remote Atmospheric Probing Information Display (RAPIO) system [AD-A196314] p 75 N89-10500
- The IBM PC at NASA Ames p 16 N89-18392
- SARSCST (human factors) p 55 N89-19890
- Electronic data generation and display system p 61 N89-19891
- Cumulative reports and publications through December 31, 1988 [NASA-CR-181784] p 16 N89-20619
- Computer-aided fabrication system implementation [AD-A203651] p 88 N89-21576
- Menuing and scrolling as alternative information management techniques [AD-A203029] p 88 N89-22574
- Concurrent Image Processing Executive (CIPE) [NASA-CR-185460] p 31 N89-25619
- Algorithm for supporting views in the microcomputer environment [PB89-174155] p 32 N89-71248
- ADRS: Automated Data Reduction System [NASA-CR-183438] p 89 N89-71278
- COMPUTER VIRUSES**
- A model for the containment of computer viruses [AIAA PAPER 86-2759] p 105 A87-18853

COMPUTER VISION

- Applications of artificial intelligence VI, Proceedings of the Meeting, Orlando, FL, Apr. 4-6, 1988 [SPIE-937] p 34 A89-33677
- The 1989 Goddard Conference on Space Applications of Artificial Intelligence [NASA-CP-3033] p 45 N89-26578
- COMPUTERIZED SIMULATION**
- 1988 Goddard Conference on Space Applications of Artificial Intelligence, Greenbelt, MD, May 24, 1988, Proceedings p 33 A89-21801
- Developments in interdisciplinary simulation and design software for mechanical systems p 19 A89-26248
- Development of a user support package for CPESIM 2 (a computer simulation for CPE (Computer Performance Evaluation) use [AD-A151899] p 22 N85-26170
- Data integration for a scientific field experiment [DE87-011302] p 74 N87-30211
- Subjective probability, combination of expert opinion and probabilistic approaches to information retrieval p 74 N86-13085
- The use of portable microcomputer as a data collection tool to support integrated simulation support environments. A concept [AD-A196414] p 14 N89-11403
- The TAVERNS emulator: An Ada simulation of the space station data communications network and software development environment p 76 N89-16366
- Applying expertise to data in the Geologist's Assistant expert system [DE89-003463] p 44 N89-20574
- Simulation and analysis of physical mapping [DE89-008399] p 56 N89-23198
- A large scale software system for simulation and design optimization of mechanical systems p 30 N89-25219
- The 1989 Goddard Conference on Space Applications of Artificial Intelligence [NASA-CP-3033] p 45 N89-26578
- The trusted function in secure decentralized processing [AD-A155252] p 111 N85-74267
- COMPUTERS**
- Computer crime [GPO-30-544] p 109 N85-19691
- Efforts at office automation and information systems utilization at Marlin Manetta Energy Systems, Incorporated [DE85-008154] p 8 N85-28633
- Integration of office automation within computing [DE85-010021] p 9 N85-33736
- Optimal combination of information from multiple sources, part 3 [AD-A174726] p 59 N87-19913
- The Remote Atmospheric Probing Information Display (RAPIO) system [AD-A196314] p 75 N89-10500
- Precision-time tradeoffs: A paradigm for processing statistical queries on databases [DE88-012024] p 60 N89-11408
- CONCURRENT PROCESSING**
- Allocation strategies for APL on the CHIP (configurable highly parallel) computer [AD-A203761] p 32 N87-70704
- CONFERENCES**
- Colloquium on the Law of Outer Space, 27th, Lausanne, Switzerland, October 7-13, 1984, Proceedings p 112 A85-29025
- EASCON '84, Proceedings of the Seventeenth Annual Electronics and Aerospace Conference, Washington, DC, September 10-12, 1984 p 1 A86-21576
- Human Factors Society, Annual Meeting, 29th, Baltimore, MD, September 29-October 3, 1985, Proceedings Volumes 1 & 2 p 47 A86-33776
- Aerospace Computer Security Conference, 2nd, McLean, VA, December 2-4, 1986, Technical Papers p 105 A87-18852
- Applying technology to systems, Aerospace Computer Security Conference, 3rd, Orlando, FL, Dec 7-11, 1987, Technical Papers p 107 A88-26209
- Human Factors Society, Annual Meeting, 31st, New York, NY, Oct. 19-23, 1987, Proceedings Volumes 1 & 2 p 49 A88-35401
- AUTOTESTCON '88, Proceedings of the IEEE International Automatic Testing Conference, Minneapolis, MN, Oct 4-6, 1988 p 33 A89-17998
- 1988 Goddard Conference on Space Applications of Artificial Intelligence, Greenbelt, MD, May 24, 1988, Proceedings p 33 A89-21801
- Applications of artificial intelligence VI, Proceedings of the Meeting, Orlando, FL, Apr. 4-6, 1988 [SPIE-937] p 34 A89-33677
- Interdisciplinary study on artificial intelligence [AD-A131359] p 35 N84-11819

- NASA Administrative Data Base Management Systems, 1983 [NASA-CP-2304] p 81 N84-21403
- Optical Information Processing for Aerospace Applications 2 [NASA-CP-2302] p 67 N84-22402
- NASA Administrative Data Base Management Systems, 1984 [NASA-CP-2323] p 82 N84-33266
- The role of information technology in emergency management [GPO-29-457] p 69 N84-34319
- Planetary Data Workshop, part 2 [NASA-CP-2343-PT-2] p 69 N84-34376
- Data Base Management: Proceedings of a conference [AD-A158285] p 85 N86-25999
- Technology transfer at OARPA, The Defense Advanced Research Projects Agency Executive summary [AD-A164503] p 10 N86-27110
- Proceedings of the 2nd Conference on Computer Interfaces and Intermediaries for Information Retrieval [AD-A174000] p 53 N87-16657
- The future of internet networking [DE87-007912] p 25 N87-24116
- Towards a tribology information system. The results of a Planning Workshop held at the National Bureau of Standards, July-August 1985 [PB88-168804] p 26 N88-21448
- Computer Science and Statistics. Proceedings of the 18th Symposium on the Interface [AD-A191296] p 28 N89-13901
- The AGS Booster control system [DE88-013990] p 28 N89-14068
- Proceedings of the Workshop on AI (Artificial Intelligence), and Distributed Problem Solving [PB88-224852] p 44 N89-16400
- Proceedings of the Scientific Data Compression Workshop [NASA-CP-3025] p 78 N89-22332
- The 1989 Goddard Conference on Space Applications of Artificial Intelligence [NASA-CP-3033] p 45 N89-26578
- Information Management in the Department of Defense. The role of libraries [AD-A130345] p 80 N85-70560
- Proceedings of the 14th Annual Conference of the Department of Energy/Contractors Micrographics and Information Management Association [DE88-000230] p 104 N88-70731
- CONGRESSIONAL REPORTS**
- Paperwork Reduction Act amendments of 1983 [H-REPT-98-147] p 3 N84-11989
- Information systems, security and privacy [RANO/P-6930] p 107 N84-21402
- Paperwork Reduction Act of 1980 [S-REPT-98-478] p 4 N84-24504
- The role of information technology in emergency management [GPO-29-457] p 69 N84-34319
- Computer crime [GPO-30-544] p 109 N85-19691
- Computer and communications security and privacy [GPO-39-741] p 109 N85-21994
- Computer security policies [GPO-52-154] p 109 N86-15919
- Technology transfer [GPO-49-539] p 114 N86-21458
- International Space Policy for the 1990's and Beyond, no 86 [GPO-E2-156] p 114 N89-12496
- Telecommunications security and privacy p 111 N85-74342
- CONNECTORS**
- Developing a connector selection DEMS using NIAM (Nissan's Information Analysis Methodology) [DE89-001656] p 61 N89-15330
- CONSULTING**
- Towards automated consulting. Design feedback from the performance of online documentation [DE87-012243] p 99 N88-13082
- CONSUMERS**
- Economic value of consumer information. A selected, annotated bibliography [PB84-235795] p 7 N85-13673
- CONTINGENCY**
- Key considerations in contingency planning for secure space flight ground control centers p 105 A85-42596
- Guidelines for contingency planning NASA (National Aeronautics and Space Administration) ADP security risk reduction decision studies [PB84-189836] p 108 N84-30737
- CONTOURS**
- GEO-EAS (Geostatistical Environmental Assessment Software) user's guide [PB89-151252] p 89 N89-27261

SUBJECT INDEX

CONTRACT MANAGEMENT

- Requirements analysis for forward funding tracking system, volume 1 [AD-A136840] p 81 N84-20425
- Requirements analysis for milestone tracking system, volume 2 [AD-A136841] p 81 N84-20426
- Mechanized contract document preparation and abstract system [AD-P002750] p 4 N84-23297
- ISTAR evaluation [AD-A201345] p 87 N89-19903

CONTRACTORS

- The flow of scientific and technical information in the US Army Research Laboratories [AD-A155050] p 9 N85-33043

CONTRACTS

- Common sense and practical experience prior to 2167 -- defense contracts involving software development [AIAA PAPER 88-3990] p 3 A89-18148
- Mechanized contract document preparation and abstract system [AD-P002750] p 4 N84-23297
- PROMIS (Procurement Management Information System) [NASA-CR-179395] p 87 N89-14933
- The PAD is back p 17 N89-70432

CONTROL SYSTEMS DESIGN

- The specification and design of a system using computer-aided software engineering and performance analysis tools [AIAA PAPER 88-4410] p 19 A88-51934
- A data-base management scheme for computer-aided control engineering p 33 A88-54484
- An approach to autonomous attitude control for spacecraft [AAS PAPER 88-004] p 33 A89-20833
- NASA Information Sciences and Human Factors Program [NASA-TM-87589] p 53 N87-22410
- A shared-world conceptual model for integrating space station life sciences telepresence operations p 55 N88-39333
- The AGS Booster control system [DE88-013990] p 26 N89-14068
- Design and implementation of a controller and a host simulator for a relational replicated database system [AD-A198951] p 26 N89-14176
- Planning actions in robot automated operations p 43 N89-15559
- An expert system based intelligent control scheme for space reactors p 44 N89-20285
- An architecture for heuristic control of real-time processes p 57 N89-26470

CONTROL THEORY

- An architecture for heuristic control of real-time processes p 57 N89-26470

CONTROL UNITS (COMPUTERS)

- A decision support system for cost-effectiveness analysis for control and security of computer systems [AD-A161388] p 58 N86-22134

CONTROLLERS

- Design and implementation of a controller and a host simulator for a relational replicated database system [AD-A198951] p 26 N89-14176
- Security concepts for microprocessor based key generator controllers [AD-A155194] p 111 N85-74089

COST ANALYSIS

- Cost considerations in database selection - A comparison of DIALOG and ESA/IRS p 90 A84-45571
- Space Station needs, attributes and architectural options, volume 2, book 3 Cost and programmatic [NASA-CR-173320] p 3 N84-18304
- Information search in judgment tasks The effects of unequal cue validity and cost [AD-A141712] p 5 N84-29437
- Test and Evaluation Master Plan (TEMP) for the Navy Occupational Health Information Management System (NOHIMS) Phase 1 Appendix A through appendix U [AD-A154179] p 84 N85-30967
- Annotated bibliography of publications dealing with occupational health and medical information systems, cost analysis procedures, evaluation methodology and related legal issues [AD-A156650] p 94 N86-11074
- Information systems plan [AD-A157911] p 84 N86-13227
- Planning and controlling the acquisition costs of Air Force information systems [AD-A204421] p 16 N89-22528
- Controlling resources in the Apollo program p 17 N89-70436

COST EFFECTIVENESS

- Editors rattle space p 114 N86-10586

- A decision support system for cost-effectiveness analysis for control and security of computer systems [AD-A161388] p 58 N86-22134

COST ESTIMATES

- Microcomputer-based local automation model System planning guidance [AD-A168136] p 98 N87-11630
- National STI (Scientific and Technical Information) system of Egypt: Implementation [PB84-161777] p 104 N84-74126

COST REDUCTION

- Building maintainable large scale software systems - The measurable benefits of CASE technology [AIAA PAPER 89-5051] p 20 A89-48182
- On query processing in distributed database systems p 61 N89-15774
- Peak power cost reduction guidebook [NASA-CR-185020] p 17 N89-71009

COSTS

- Artificial intelligence costs, benefits, and risks for selected spacecraft ground system automation scenarios p 33 A89-21803
- The costs of not having refined information p 59 N86-26798
- Planning and controlling the acquisition costs of Air Force information systems [AD-A204421] p 16 N89-22528

COUNTERMEASURES

- Livermore risk analysis methodology: A quantitative approach to management of the risk associated with the operation of information systems [DE87-006828] p 110 N87-24232

COUPLING

- Case-based reasoning The marriage of knowledge base and data base p 43 N89-15574

CREW WORKSTATIONS

- Flight stations and offices of the future - How similar will they be p 46 A84-19282

CRIME

- Computer crime [GPO-30-544] p 109 N85-19691

CRUSTAL FRACTURES

- Quick-look guide to the crustal dynamics project's data information system [NASA-TM-87818] p 73 N87-23018

CYCLES

- Man-machine systems of the 1990 decade Cognitive factors and human interface issues [AD-A163865] p 52 N86-25123

D

DATA ACQUISITION

- Data access for scientific problem solving p 19 A88-20252
- Information search in judgment tasks The effects of unequal cue validity and cost [AD-A141712] p 5 N84-29437
- Federal Mineral Land Information System p 70 N85-35459
- Guidelines for submitting data to the National Space Science Data Center [NASA-TM-87500] p 23 N86-15209
- Keeping the nation's secrets A report to the Secretary of Defense by the Commission to Review DoD Security Policies and Practices [AD-A161998] p 110 N86-24562
- A study of organizational information search, acquisition, storage and retrieval [AD-A172063] p 98 N87-1661
- Acquisition, use and archiving of real-time data [DE86-014769] p 25 N87-18282
- Implementing and managing change A guide for assessing information technology [DE88-000035] p 12 N88-11571
- Methods of eliciting information from experts [AD-A187468] p 54 N88-18189
- The Engineer Studies Center guide to research and data collection [AD-A189971] p 13 N88-23680
- The use of portable microcomputer as a data collection tool to support integrated simulation support environments A concept [AD-A196414] p 14 N89-11403
- Plan recognition, knowledge acquisition and explanation in an intelligent interface p 42 N89-13191
- Computer-aided survey methods p 86 N89-13954
- Status of DOE information network modifications [DE89-005191] p 101 N89-20028
- Fastbus standard routines [DOE/ER-0367] p 29 N89-20645
- The Software Engineering Laboratory [NASA-CR-183455] p 89 N89-71121

DATA BASE MANAGEMENT SYSTEMS

- Algorithm for supporting views in the microcomputer environment [PB89-174155] p 32 N89-71248
- ### DATA BASE MANAGEMENT SYSTEMS
- Interconnecting heterogeneous database management systems p 18 A84-41197
 - An approach to user specification of interactive display interfaces p 47 A85-43401
 - Incorporating knowledge rules in a semantic data model - An approach to integrated knowledge management p 32 A87-16697
 - A practical design for a multilevel secure database management system [AIAA PAPER 86-2771] p 106 A87-18855
 - Multiple data store design [AIAA PAPER 86-2772] p 106 A87-18856
 - Secure database management system architectural analysis [AIAA PAPER 86-2773] p 106 A87-18857
 - Satellite data management for effective data access p 64 A88-36690
 - A data-base management scheme for computer-aided control engineering p 33 A88-54484
 - A data analysis expert system for large established distributed databases p 33 A89-11718
 - Coping with legacy factors -- in data base management systems integration p 19 A89-12176
 - Data base system considerations in engineering design p 19 A89-12177
 - An aide for instruction on integrated engineering design and support p 50 A89-12179
 - An integrated data base management system for engineering applications based on an extended relational model p 19 A89-12181
 - Sources and standards for computerized materials property data and intelligent knowledge systems p 33 A89-12182
 - The second generation intelligent user interface for the crustal dynamics data information system -- for nasa space missions p 34 A89-21810
 - Living in the past - Knowledge capture of evolving space systems [AIAA PAPER 89-0190] p 34 A89-25165
 - Astronomical data analysis from remote sites p 3 A89-27210
 - NASA astrophysical data system (ADS) study p 81 A89-27239
 - Knowledge-based image data management - An expert front-end for the BROWSE facility p 35 A89-41158
 - Searching the PASCAL database - A user's perspective p 92 A89-45650
 - Compilation of cooperative data element dictionary of five federal agencies' systems for processing of technical report literature [AD-A130797] p 92 N84-11059
 - Requirements analysis for milestone tracking system, volume 2 [AD-A136841] p 81 N84-20426
 - NASA Administrative Data Base Management Systems, 1983 [NASA-CP-2304] p 81 N84-21403
 - Automated RTOP management system p 82 N84-21406
 - Intercenter Problem Reporting and Corrective Action System (PRACAS) p 3 N84-21408
 - Automated administrative data bases p 82 N84-21411
 - Method for accessing distributed heterogeneous databases p 67 N84-21412
 - Managing geometric information with a data base management system p 67 N84-22211
 - The database management system A topic and a tool p 4 N84-22316
 - Beyond the data base Technology for information resource management [AD-A138840] p 4 N84-23402
 - Development of a proposed standard for the exchange of scientific microcomputer programs [PB84-157940] p 4 N84-24244
 - The implementation of a multi-backend database system (MDBS) Part 4 The revised concurrency control and directory management processes and the revised definitions of inter-process and inter-computer messages [AD-A140874] p 21 N84-27453
 - Success with Data Management 4 at the DOE Pinellas Plant [DE84-008021] p 82 N84-29802
 - NASA plot land data system p 68 N84-31741
 - Logical optimization for database uniformization [NASA-CR-173836] p 5 N84-32282
 - An online directory of databases for material properties [DE84-013210] p 68 N84-33099
 - NASA Administrative Data Base Management Systems, 1984 [NASA-CP-2323] p 82 N84-33266

- Strategies for converting to a DBMS environment p 5 N84-33267
- Effective organizational solutions for implementation of DBMS software packages p 5 N84-33268
- The administrative window into the integrated DBMS p 82 N84-33270
- Strip and load data p 6 N84-33273
- User's guide for an IBM PL/I implementation of the international standard organization DS 8211 information processing specification for a data descriptive file for information interchange [ORNL/CSD-TM-207] p 6 N84-34188
- Sandia National Laboratories administrative data processing systems [DE84-014328] p 82 N84-34202
- Planetary Data Workshop, part 2 [NASA-CP-2343-PT-2] p 69 N84-34376
- Database management p 69 N84-34377
- Preserving the time dimension in information systems p 37 N85-12784
- Competitive assessment of the US information services industry [PB84-174804] p 7 N85-12803
- Archiving and exchange of a computerized marine seismic database: The ROSE data archive system [DE84-901453] p 69 N85-13677
- Future database machine architectures [AD-A146786] p 22 N85-16481
- Towards an ideal database server for office automation environments [AD-A146184] p 7 N85-17742
- Sector suite man-machine functional capabilities and performance requirements [AD-A148881] p 52 N85-19647
- Computer and communications security and privacy [GPO-39-741] p 109 N85-21994
- Network information management subsystem p 22 N85-27106
- Data dictionary design as a stepping-stone to DBMS (Data Base Management System) implementation in the Indonesian Army Data Collecting and Processing Service [AD-A152101] p 84 N85-27752
- U.S. Data base administration analysis [AD-A153031] p 8 N85-28879
- Avionics Data Base users manual [AD-A153810] p 69 N85-28942
- Test and Evaluation Master Plan (TEMP) for the Navy Occupational Health Information Management System (NOHIMS) Phase 1: Appendix A through appendix U [AD-A154179] p 84 N85-30967
- Design and implementation of an intelligence database [AD-A154095] p 70 N85-30973
- The architectural requirements and integration analysis of a database server for office automation [AD-A155517] p 8 N85-32825
- EPALIT: A data management system applied to the control and retrieval of technical reports [PB85-193068] p 94 N85-35634
- Information systems plan [AD-A157911] p 84 N86-13227
- Office automation: The administrative window into the integrated DBMS p 9 N86-15174
- Improving management decision processes through centralized communication linkages p 58 N86-15175
- Integrated bibliographic information system: Integrating resources by integrating information technologies [AD-A157700] p 95 N86-15211
- Logical and physical database design with a full-text environment [DE85-015683] p 23 N86-16159
- Design and implementation of a personnel database [AD-A159388] p 70 N86-16917
- Reference model for DBMS (database management system) standardization [PB85-225217] p 9 N86-16923
- Sandia computerized shock compression bibliographical database [DE85-018542] p 70 N86-17222
- Bibliographic post-processing with the TIS Intelligent Gateway: Analytical and communication capabilities [DE85-018153] p 95 N86-18245
- Advanced Technology Unit Training and Management System (ATUTMS) User's guide [NASA-CR-176843] p 71 N86-22130
- A decision support system for cost-effectiveness analysis for control and security of computer systems [AD-A161388] p 58 N86-22134
- Microcomputer-based detachment administrative management system for the LAMPS (Light Airborne Multi-Purpose System) community: A requirements analysis [AD-A162366] p 85 N86-24552
- Keeping track of archived drawings: A case study [DE86-003129] p 71 N86-24572
- Data Base Management: Proceedings of a conference [AU-A158285] p 85 N86-25999
- Databases for statistics p 72 N86-26000
- The role of databases in knowledge-based systems [AD-A166365] p 38 N86-30573
- An assessment of CO-ROM (Compact Disk Read Only Memory) [AD-A169259] p 72 N87-11492
- Documentation of materials data for computer storage and retrieval [DE86-009509] p 72 N87-11493
- The DOD gateway information system directory of resources [AD-A174154] p 25 N87-16658
- Data management of a multilaboratory field program using distributed processing [DE86-014770] p 73 N87-18465
- Using bar code technology to enhance classified document accountability [DE87-000780] p 98 N87-21739
- Click-look guide to the crustal dynamics project's data information system [NASA-TM-87818] p 73 N87-23018
- Considerations in developing a comprehensive computer security support database system [DE87-005527] p 110 N87-23151
- The development of a prototype intelligent user interface subsystem for NASA's scientific database systems [NASA-TM-87821] p 53 N87-24098
- Information network for numeric databases of materials properties [DE87-010512] p 74 N87-28460
- Intelligent data management p 53 N87-29132
- Data integration for a scientific field experiment [DE87-011302] p 74 N87-30211
- Design and development of a database for spectral data and analysis results [DE87-011323] p 74 N88-11564
- Electronic Records Administration at the Savannah River Plant [DE87-014842] p 12 N88-12415
- Towards automated consulting: Design feedback from the performance of online documentation [DE87-012243] p 99 N88-13082
- Foundation: Transforming data bases into knowledge bases p 39 N88-16423
- Critical issues in NASA information systems [NASA-CR-182380] p 13 N88-16577
- Management of complex information in support of evolving autonomous expert systems [AD-A186680] p 39 N88-17337
- Laboratory Information Management System (LIMS): A case study [NASA-TM-100835] p 26 N88-21697
- Application of new technologies to DTIC document processing [AD-A189778] p 99 N88-22823
- Computer-aided research [DE88-007771] p 54 N88-26114
- The second generation intelligent user interface for the crustal dynamics data information system p 40 N88-30352
- Integrating images, applications, and communications networks, volume 5 [AD-A195854] p 26 N88-30452
- Integrating distributed homogeneous and heterogeneous databases: Prototypes, volume 3 [AD-A195852] p 27 N88-10668
- Object-oriented approach to integrating database semantics, volume 4 [AD-A195853] p 41 N88-10672
- Develop an automated Data Base Management System (DBMS) Report on DBMS software and user's guide [DE88-015996] p 27 N89-10674
- The use of portable microcomputer as a data collection tool to support integrated simulation support environments: A concept [AD-A196414] p 14 N89-11403
- Precision-time tradeoffs: A paradigm for processing statistical queries on databases [DE88-012024] p 60 N89-11408
- Three-dimensional computer graphics brain-mapping project [AD-A197053] p 41 N89-11435
- REFREE: Bibliographic database manager, documentation [PB88-200767] p 100 N89-11620
- Computer science and technology: Guide to distributed database management [PB88-201561] p 27 N89-11621
- Computer architectures for very large knowledge bases p 41 N89-12294
- Space station integrated propulsion and fluid systems study [NASA-CR-179393] p 75 N89-12581
- Practical issues relating to the internal database predicates in an OR-parallel progeny: Extensions and useful hacks [DE88-010019] p 27 N89-13174
- Multiple representation document development [AD-A197369] p 76 N89-13305
- Computer Science and Statistics: Proceedings of the 18th Symposium on the interface [AD-A191296] p 28 N89-13901
- Implications of the language of data for computing systems p 28 N89-13911
- The language of data: A general theory of data p 86 N89-13912
- Artificial intelligence techniques for retrospective help in data analysis p 42 N89-13915
- Experiences with a data analysis management prototype p 60 N89-13918
- Statistically sophisticated software and DYNDE p 7 N89-13920
- A data viewer for multivariate data p 28 N89-13921
- Computer-aided survey methods p 86 N89-13954
- The Environment for Application Software Integration and Execution (EASIE), version 1.0 Volume 2 Program integration guide [NASA-TM-100574] p 60 N89-13995
- Design and implementation of a controller and a host simulator for a relational replicated database system [AD-A198951] p 28 N89-14176
- Information resource management: An architectural concept/appearance [DE88-015184] p 86 N89-14177
- ELEFANT test results under FORTRAN-PLUS on the active memory technology DAP 510-8 [DE88-017264] p 28 N89-14700
- CD-ROM (Compact Disc Read Only Memory) library of the future [AD-A197943] p 100 N89-14702
- PROMIS (Procurement Management Information System) [NASA-CR-178395] p 87 N89-14933
- Interactive access to scientific and technological factual databases worldwide p 100 N89-14943
- Resident database interfaces to the DAVID system, a heterogeneous distributed database management system [NASA-CR-184615] p 87 N89-14946
- USL/DBMS NASA/RECON working paper series: Standards [NASA-CR-184508] p 87 N89-14948
- Overview of the NASA/RECON educational, research, and development activities of the Computer Science Departments of the University of Southwestern Louisiana and Southern University [NASA-CR-184509] p 100 N89-14949
- Knowledge based systems: A critical survey of major concepts, issues and techniques: Visuals [NASA-CR-184518] p 43 N89-14958
- An innovative, multidisciplinary educational program in interactive information storage and retrieval: Presentation visuals [NASA-CR-184521] p 100 N89-14961
- An overview of the USL/DBMS NASA/PC R and D project working paper series [NASA-CR-184533] p 15 N89-14973
- General specifications for the development of a USL/DBMS NASA/PC R and D distributed workstation [NASA-CR-184538] p 15 N89-14978
- Developing a connector selection DBMS using NIAM (Nissan's Information Analysis Methodology) [DE89-001658] p 61 N89-15330
- Case-based reasoning: The marriage of knowledge base and data base p 43 N89-15574
- Spacecraft environmental anomalies expert system p 43 N89-15607
- On query processing in distributed database systems p 61 N89-15774
- Thermodynamics of materials in the range C10-C16 data base reference manual [DE88-001244] p 76 N89-16018
- The computational structural mechanics testbed architecture: Volume 4: The global-database manager GAL-DBM [NASA-CR-178387] p 76 N89-16195
- A database management capability for Ada p 77 N89-16371
- A database approach to computer integrated manufacturing [AD-A201030] p 16 N89-18088
- An architecture for integrating distributed and cooperating knowledge-based Air Force decision aids p 44 N89-19841
- ISTAR evaluation [AD-A201345] p 87 N89-19903
- Status of DOE information network modifications [DE89-005191] p 101 N89-20028

Applying expertise to data in the Geologist's Assistant expert system [DE89-003463] p 44 N89-20574

Monotonically improving approximate answers to relational algebra queries [NASA-CR-184874] p 81 N89-20717

Space operations: Testing of NASA's technical and management information system [GAO/ITTC-89-28] p 101 N89-20869

GRAPS (Graphical Plotting System) user's guide. A graphical plotting system for displaying scientific and engineering data [AD-A202583] p 77 N89-21559

Development of a dBase III plus database for office automation within the Department of Logistics Management, School of Systems and Logistics [AD-A202628] p 18 N89-22354

Link performance data management and analysis system users manual [AD-A203805] p 88 N89-22356

Information technology resources long-range plan: FY90 to FY94 [DE89-007784] p 18 N89-22527

Core knowledge system. Storage and retrieval of inconsistent information p 45 N89-23132

Simulation and analysis of physical mapping [DE89-008369] p 56 N89-23198

Microfilm and computer full text of archival documents [AD-A204055] p 103 N89-23377

Technology transfer report [DE89-008044] p 103 N89-23361

A database management system for computer-aided digital circuit design [AD-A206047] p 79 N89-24066

A visual object-oriented unification system [AD-A206228] p 30 N89-24066

A program interface prototype for a multimedia database incorporating images [AD-A206439] p 45 N89-24226

TRUSS: An intelligent design system for aircraft wings p 79 N89-25182

Performance issues in management of the Space Station Information System [NASA-CR-185409] p 88 N89-25773

An expert system to facilitate selecting a database management system [DE89-012350] p 45 N89-25774

Implementation of a hypercube database system [DE89-010474] p 88 N89-26413

An architecture for heuristic control of real-time processes p 57 N89-26470

The utilization of neural nets in populating an object-oriented database p 45 N89-26599

An intelligent user interface for browsing satellite data catalogs p 79 N89-26601

Natural language processing and advanced information management p 88 N89-26602

An asynchronous interface between a natural language query interpreter and a database management system [AD-A206618] p 57 N89-26779

A multimedia database management system supporting contents search in media data [AD-A207070] p 103 N89-26780

Risk assessment of compressed natural gas-fueled vehicle operations, phase 1 [PB89-186841] p 104 N89-27196

Technology Master List data base management system, user's manual [PB89-177802] p 89 N89-27590

Developing a geologic and engineering properties data base with INGRES p 79 N89-27593

Management Information Database System [DE89-014595] p 89 N89-27597

Approaching distributed database applications using a programmable terminal emulator [DE89-014831] p 31 N89-28308

Conversion of mass storage hierarchy in an IBM computer network [AD-A208520] p 31 N89-28330

On-line database development and research and editorial support [NASA-CR-183249] p 89 N89-28440

An implementation of a data definition facility for the graphics language for database [AD-A207380] p 89 N89-28442

Problems and solutions in online documentation systems [DE89-014092] p 80 N89-28447

Information processing resources management [NASA-TM-87468] p 17 N89-27268

I/O buffer performance in a virtual memory system [NASA-CR-185730] p 32 N89-71335

Performance of a data base management system with partially locked virtual buffers [NASA-CR-185729] p 90 N89-71336

DATA BASES

Cost considerations in database selection - A comparison of DIALOG and ESA/IRS p 80 A84-45571

Data dissemination and online numeric database systems p 82 A85-14170

Idiot sheets - Preparing and using Database guide sheets p 90 A85-24514

An intermediary's perspective of online databases for local governments p 80 A85-24549

The pilot climate data system p 93 A86-20869

EXAMINE - An expert system to mediate human-computer dialogues p 47 A86-23740

Computerized numeric databases for materials properties p 63 A87-13182

Experience, methods and prospects in commercial online materials data distribution p 63 A87-13182

The development of an intelligent user interface for NASA's scientific databases p 48 A87-28445

Computer architecture for a surrogate file to a very large data/knowledge base p 91 A87-34522

NASA-STD-3000, Man-System Integration Standards - The new space human engineering standards [IAF PAPER 87-550] p 49 A88-16187

Educational uses of the aerospace database [AIAA PAPER 88-0749] p 107 A88-22566

The effects of different data base formats on information retrieval p 58 A88-35463

DOD information analysis centers - Their resources and availability [AIAA PAPER 89-0850] p 91 A89-25619

How an engineer acquires and uses information through the DIALOG system [AIAA PAPER 89-0851] p 91 A89-25620

A multi-spectral analysis system using large databases - from satellite and ground-based observations p 58 A89-27177

The use and value of Defense Technical Information Center products and services [AD-A130805] p 92 N84-11061

An interactive sole information system. Users manual [AD-A133480] p 86 N84-18078

VLSI architectures for pattern analysis and image database management p 20 N84-19163

Functional and database architecture design [AD-A136275] p 3 N84-19169

Guide to the development of a human factors engineering data retrieval system [AD-A136918] p 51 N84-20147

Videotex premastering facility. Technical evaluation [PB84-135821] p 20 N84-20840

Action Information Management System (AIMS). A user's view p 82 N84-21405

NASA-wide standard administrative systems p 82 N84-21415

The Pilot Land Data System. Report of the Program Planning Workshops [NASA-TM-86250] p 67 N84-26468

The implementation of a multi-backend database system (MDBS) Part 4: The revised concurrency control and directory management processes and the revised definitions of inter-process and inter-computer messages [AD-A140674] p 21 N84-27453

NASA pilot land data system p 68 N84-31741

An online directory of databases for material properties [DE84-013210] p 68 N84-33099

An evaluation of two reliability and maintainability information systems [AD-A143438] p 58 N84-33290

Notes for medical catalogs, 1983 [PB84-195874] p 6 N84-33296

User's guide for an IBM PL/I implementation of the international standard organization DIS 8211 information processing specification for a data descriptive file for information interchange [ORNL/CSD-TM-207] p 6 N84-34168

The creation of a central database on a microcomputer network [AD-A143875] p 21 N84-34326

Database management p 69 N84-34377

International banking of satellite and in-situ wave data by the Marine Information and Advisory Services (MIAS) p 69 N85-12434

Knowledge representation and natural-language semantics [AD-A148025] p 37 N85-12615

Evaluation of the National Library of Medicine's programs in the medical behavior sciences. Online searchers' reactions to database and vendor capabilities in the Medical Behavioral Sciences (MBS), study 4 [PB84-230523] p 93 N85-12798

Guide to human factors information sources [AD-A149102] p 52 N85-19649

Evaluation of the vocabulary switching systems [PB85-127157] p 93 N85-22260

General design considerations of an Air Force information system [AD-A150611] p 7 N85-23449

Intel DIS evaluation [DE85-003748] p 83 N85-23451

An analysis of data dictionaries and their role in information resource management [AD-A152134] p 7 N85-27121

Retrieval performance in a full text journal article database p 94 N85-27747

Access path optimization for network database retrieval p 94 N85-27749

Design of an interface to an information retrieval network p 94 N85-27750

Avionics Data Base users manual [AD-A153810] p 69 N85-28842

SAFEORD: Safety of explosive ordnance databank [AD-A154058] p 70 N85-30972

Design and implementation of an intelligence database [AD-A154085] p 70 N85-30973

The architectural requirements and integration analyses of a database server for office automation [AD-A155517] p 8 N85-32825

A comparative study of OCLC, Inc. and the Washington Library Network in twenty-nine Pacific Northwest academic libraries p 109 N86-15206

Design and implementation of a personnel database [AL-414726] p 70 N86-16917

The integrated bibliographic information system. Resource sharing tailored for local needs [AD-A181700] p 95 N86-21431

The DOD gateway information system [AD-A181701] p 96 N86-21432

Content-Addressable Memory manager. Design and evaluation [AD-A184037] p 23 N86-25133

Data Base Management: Proceedings of a conference [AD-A185285] p 85 N86-25999

Databases for statistics p 72 N86-26000

Carbon Dioxide Information Center FY 1985 [DE86-004654] p 72 N86-26245

Modern hardware technologies and software techniques for on-line database storage and access [AD-A184993] p 24 N86-26824

Measuring the value of information and information systems, services and products p 97 N86-28799

Data set management p 24 N86-29265

Methods of downloading to user institutions p 24 N86-29266

Search and retrieval of office files using dBASE 3 [NASA-TM-86550] p 10 N86-30378

The DoD gateway information system. Prototype experience [AD-A186200] p 97 N86-30570

The role of databases in knowledge-based systems [AD-A186365] p 38 N86-30573

Guidelines on the structure, management, and operation of climate data centers [WCP 99] p 72 N86-32838

Microcomputer-based local automation model. System planning guidance [AD-A188136] p 98 N87-11630

A user's guide to the socioeconomic environmental demographic information system (SEEDIS) [AD-A188917] p 73 N87-12388

Development of a micrometeorological and tracer data archive [PB87-110490] p 73 N87-19845

Toward highly portable database systems. Issues and solutions [AD-A174635] p 11 N87-20131

Considerations in developing a comprehensive computer security support database system [DE87-005527] p 110 N87-23151

OTIC (Defense Technical Information Center) model action plan for incorporating DGIS (DOD Gateway Information System) capabilities [AD-A 1102] p 98 N87-27551

Intelligent data management p 53 N87-29132

Design and development of a database for spectral data and analysis results [DE87-011323] p 74 N88-11564

Advanced techniques for the storage and use of very large, heterogeneous spatial databases. The representation of geographic knowledge. Toward a universal framework - relations (mathematics) [NASA-CR-181517] p 39 N88-12421

Self-adaptive data bases [AD-A186414] p 26 N88-15729

Foundation. Transforming data bases into knowledge bases p 39 N88-16423

Knowledge retrieval as specialized inference [AD-A189042] p 39 N88-20899

- Towards a tribology information system: The results of a Planning Workshop held at the National Bureau of Standards, July-August 1985
[PB86-168804] p 26 N86-21448
- Capitalizing on experience with intelligence gateway software
[AD-A183362] p 99 N86-27971
- A comparison of typical meteorological year solar radiation information with the SOLMET data base
[DE88-009242] p 75 N88-29247
- Technical options regarding knowledge-based integrated information systems engineering, volume 8
[AD-A195857] p 40 N88-30454
- Develop an automated Data Base Management System (DBMS). Report on DBMS software and user's guide
[DE88-015998] p 27 N88-10874
- Precision-time tradeoffs. A paradigm for processing statistical queries on databases
[DE88-012024] p 60 N88-11408
- Integrated database approach for geodetic applications
[DE88-012726] p 75 N88-11815
- Implications of the language of data for computing systems
p 28 N89-13911
- The language of data. A general theory of data
p 86 N89-13912
- Intelligent data management
p 86 N89-13913
- A data viewer for multivariate data
p 28 N89-13921
- Computer-aided survey methods
p 86 N89-13954
- Interactive access to scientific and technological factual databases worldwide
[DE88-016172] p 100 N89-14943
- Developing a connector selection DEMS using NIAM (Nissen's Information Analysis Methodology)
[DE89-001658] p 81 N89-15330
- Global updates in integration of distributed databases
p 29 N89-15773
- Thermodynamics of materials in the range C10-C18 data base reference manual
[DE88-001244] p 76 N89-16018
- Rdesign: A data dictionary with relational database design capabilities in Ada
p 43 N89-16368
- The IUE data bank: Statistics and future aspects
p 115 N89-16609
- A database approach to computer integrated manufacturing
[AD-A201030] p 16 N89-18068
- Implementation of a hypercube database system
[DE89-010474] p 88 N89-26413
- Technology Master List data base management system, user's manual
[PB89-177802] p 89 N89-27590
- Developing a geologic and engineering properties data base with INGRES
[DE89-013520] p 79 N89-27593
- Management Information Database System
[DE89-014595] p 89 N89-27597
- Data base development and research and editorial support
[NASA-CR-183249] p 89 N89-28440
- An implementation of a data definition facility for the graphics language for database
[AD-A207380] p 89 N89-28442
- User's guide for the training database system, version 2.1
[DE88-016653] p 80 N89-70023
- NASA scientific and technical information system study
p 104 N89-70333
- DATA COMPRESSION**
- Proceedings of the Scientific Data Compression Workshop
[NASA-CP-3025] p 78 N89-22332
- Space data management at the NSSOC (National Space Sciences Data Center). Applications for data compression
p 102 N89-22334
- DATA INTEGRATION**
- Incorporating knowledge rules in a semantic data model
- An approach to integrated knowledge management
p 32 A87-16697
- A Distributed Sensor Architecture for advanced aerospace systems
p 34 A89-26960
- Data integration for a scientific field experiment
[DE87-011302] p 74 N87-30211
- An architecture for integrating distributed and cooperating knowledge-based Air Force decision aids
p 44 N89-19841
- DATA LINKS**
- LORAN C Offshore Flight Following (LOFF) in the Gulf of Mexico
[AD-A197179] p 75 N89-12558
- Link performance data management and analysis system users manual
[AD-A203605] p 88 N89-22356

DATA MANAGEMENT

- Data management standards for space information systems
[AIAA PAPER 87-2205] p 2 A87-48580
- Satisfying the information requirements of an aircraft T&E center
p 64 A87-49213
- Satellite data management for effective data access
p 64 A88-38680
- Telescience, an operational approach to science investigation
[IAF PAPER 88-011] p 2 A89-17630
- Automated cataloging and characterization of space-derived data
p 91 A89-21812
- Software aspects of earth observation
[AIAA PAPER 89-0779] p 65 A89-28480
- The microcomputer in the acquisition environment
[AD-P00274] p 87 N84-23295
- NASA metrology information system. A NEMS subsystem
p 66 N84-33279
- Implementing automated information systems in the Air Force
[AD-A143398] p 8 N84-33286
- Solar-terrestrial data access distribution and archiving
[NASA-CR-173906] p 68 N84-3295
- Managing microcomputers. A survival kit for functional managers
[AD-A144006] p 21 N84-34318
- Planetary Data Workshop, part 2
[NASA-CP-2343-PT-2] p 69 N84-34376
- Database management
p 69 N84-34377
- International banking of satellite and in-situ wave data by the Marine Information and Advisory Services (MIAS)
p 69 N85-12434
- Archiving and exchange of a computerized marine seismic database. The ROSE data archive system
[DE84-901453] p 69 N85-13677
- Introduction to the Space Physics Analysis Network (SPAN)
[NASA-TM-86499] p 22 N85-24198
- Data dictionary design as a stepping-stone to DBMS (Data Base Management System) implementation in the Indonesian Army Data Collecting and Processing Service
[AD-A152101] p 64 N85-27752
- The international scope of data evaluation
[DE85-005953] p 8 N85-30760
- On-line interactive database for the storage and rapid information retrieval of gas industry data
[T86-900895] p 96 N86-28792
- Data set management
p 24 N86-29285
- A structural optimization method for information resource management
[AD-A186420] p 59 N86-29722
- Documentation of materials data for computer storage and retrieval
[DE86-009509] p 72 N87-11493
- Federal information systems management. Problems, solutions and more problems
[AD-A171366] p 11 N87-13353
- Intelligent data management
p 53 N87-29132
- Self-adaptive data bases
[AD-A186414] p 26 N88-15729
- The role of working memory in language comprehension
[AD-A192721] p 54 N88-26805
- Automated cataloging and characterization of space-derived data
p 13 N88-30354
- Knowledge-Based Integrated Information Systems Development Methodologies Plan Knowledge-Based Integrated Information Systems Engineering (KBIISE) report, volume 2
[AD-A195851] p 41 N88-30455
- Advanced data management design for autonomous telebot systems in space using spaceborne symbolic processors
p 41 N89-10096
- The Remote Atmospheric Probing Information Display (RAPID) system
[AD-A196314] p 75 N89-10500
- LORAN C Offshore Flight Following (LOFF) in the Gulf of Mexico
[AD-A197179] p 75 N89-12558
- Software process modeling
[AD-A197137] p 27 N89-13154
- Plan recognition, knowledge acquisition and explanation in an intelligent interface
p 42 N89-13191
- Computer Science and Statistics. Proceedings of the 18th Symposium on the Interface
[AD-A191296] p 28 N89-13901
- Intelligent data management
p 86 N89-13913
- Tools for data analysis management
p 60 N89-13919
- Computer-aided survey methods
p 86 N89-13954
- The computational structural mechanics testbed architecture Volume 1. The language
[NASA-CR-178384] p 76 N89-14472

- Global updates in integration of distributed databases
p 29 N89-15773
- A computer-based specification methodology
p 101 N89-16301
- DEC Adx. interface to Screen Management Guidelines (SMG)
p 101 N89-16303
- Space station Ada runtime support for nested atomic transactions
p 77 N89-18375
- EDITSPEC: A FORTRAN 77 program for editing and manipulating spectral data from the Varian CARY 2390 UV-VIS-NIR spectrophotometer
[AD-A200352] p 29 N89-16388
- ATF (Advanced Toroidal Facility) data management
[DE89-001872] p 77 N89-16486
- Electronic data generation and display system
p 81 N89-19891
- Computer technologies and institutional memory
p 55 N89-20062
- SIRE. A Simple Interactive Rule Editor for NICES
p 78 N89-21730
- The computational structural mechanics testbed architecture, Volume 2: Directives
[NASA-CR-178385] p 78 N89-22133
- Proceedings of the Scientific Data Compression Workshop
[NASA-CP-3025] p 78 N89-22332
- Space data management at the NSSOC (National Space Sciences Data Center). Applications for data compression
p 102 N89-22334
- Development of a dBase III plus database for office automation within the Department of Logistics Management, School of Systems and Logistics
[AD-A202628] p 18 N89-22354
- Merging and scrolling as alternative information management techniques
[AD-A203029] p 88 N89-22524
- Identifying users and how to reach them
p 102 N89-23370
- Information resources management
p 17 N89-23371
- An experimental investigation into software reliability
[AD-A206293] p 30 N89-24069
- Concurrent Image Processing Executive (CIPE)
[NASA-CR-185460] p 31 N89-25619
- The 1989 Goddard Conference on Space Applications of Artificial Intelligence
[NASA-CP-3033] p 45 N89-26578
- A rapid prototyping/artificial intelligence approach to space station-era information management and access
p 46 N89-26600
- GEO-EAS (Geostatistical Environmental Assessment Software) user's guide
[PB89-151232] p 89 N89-27261
- Allocation strategies for APL on the ChIP (configurable highly parallel) computer
[AD-A203781] p 32 N89-70704
- The Software Engineering Laboratory
[NASA-CR-183455] p 89 N89-71121
- Performance of a data base management system with partially locked virtual buffers
[NASA-CR-185729] p 90 N89-71336
- DATA PROCESSING**
- Automated cataloging and characterization of space-derived data
p 91 A89-21812
- Astronomical data analysis from remote sites
p 3 A89-27210
- Project FIRST (Faculty Information and Research Service for Texas) technical description of project and results
[PB84-161629] p 67 N84-24501
- Guidelines for developing NASA (National Aeronautics and Space Administration) ADP security risk management plans
[NASA-CR-173564] p 108 N84-26317
- Guidelines for development of NASA (National Aeronautics and Space Administration) computer security training programs
[NASA-CR-173562] p 108 N84-26319
- Guideline for computer security certification and accreditation Category ADP (Automatic Data Processing) operations Subcategory Computer security Federal information processing standards
[FIPS-PUB-102] p 108 N84-30736
- Fundamentals of computer security
[DE84-011476] p 108 N84-31989
- IBM's token-ring LAN (Local-Area Network). A base-level communications solution
[AD-A143446] p 21 N84-33063
- Planetary Data Workshop part 2
[NASA-CP-2343-PT-2] p 69 N84-34376
- Recommended documentation for computer users at ANL
[C84-016285] p 7 N85-15434
- Post-procesing of bibliographic citations from DOE/Recon, LISA/Recon, and DOD/DROLS
[DE85-000617] p 93 N85-20938

- Federal Mineral Land Information System p 70 N85-35459
- Guidelines for submitting data to the National Space Science Data Center [NASA-TM-87500] p 23 N86-15209
- Reference model for DBMS (database management system) standardization [PB85-225217] p 9 N86-18923
- Man-machine systems of the 1990 decade: Cognitive factors and human interface issues [AD-A183865] p 52 N86-25123
- University participation via UNIDATA, part 2 p 72 N86-29296
- Organizations as information processing systems: Environmental characteristics, company performance and chief executive scanning, an empirical study [AD-A188035] p 10 N86-33201
- Data integration for a scientific field experiment [DE87-011302] p 74 N87-30211
- Information and stochastic systems [AD-A192167] p 26 N86-24838
- Automated cataloging and characterization of space-derived data p 13 N86-30354
- Integrated database approach for geoscientific applications [DE88-012726] p 75 N89-11615
- Multiple representation document development [AD-A197369] p 76 N89-13305
- The language of data: A general theory of data p 86 N89-13912
- Intelligent data management p 86 N89-13913
- Artificial intelligence techniques for retrospective help in data analysis p 42 N89-13915
- Experiences with a data analysis management prototype p 60 N89-13918
- A data viewer for multivariate data p 28 N89-13921
- BIOMASSCOMP: Artificial neural networks and neurocomputers [AD-A200902] p 44 N89-19123
- Using English for indexing and retrieving [AD-A202227] p 101 N89-20866
- Space data management at the NSSDC (National Space Science Data Center): Applications for data compression p 112 N89-22334
- Information resources management p 17 N89-23371
- Natural language processing and advanced information management p 88 N89-26602
- The Shared Bibliographic Input Network (SBIN): A summary of the experiment [AD-A133001] p 104 N84-75665
- Guidelines for metric translation of software [PB86-240215] p 17 N87-70232
- The Software Engineering Laboratory [NASA-CR-183455] p 89 N87-71121
- DATA PROCESSING EQUIPMENT**
- Mechanized contract document preparation and abstract system [AD-P002750] p 4 N84-23297
- Report on U.S. domestic and international telecommunications and information markets [PB84-186362] p 21 N84-27602
- Information systems plan [AD-A157911] p 84 N86-13227
- Microcomputer-based local automation model: System planning guidance [AD-A168136] p 98 N87-11630
- ADRS: Automated Data Reduction System [NASA-CR-183438] p 89 N89-71278
- DATA PROCESSING TERMINALS**
- DEC Ada interface to Screen Management Guidelines (SMG) p 101 N89-18303
- DATA REDUCTION**
- A library collection of software documentation specific to astronomical data reduction p 91 A89-27235
- Guidelines for submitting data to the National Space Science Data Center [NASA-TM-87500] p 23 N86-15209
- Text compression using word tokenization [DE86-000832] p 95 N86-19260
- ADRS: Automated Data Reduction System [NASA-CR-183438] p 89 N89-71278
- DATA RETRIEVAL**
- Integrated Terrain Access/Retrieval System p 62 A85-44992
- Technology advances for information access: Prospects and impact [AIAA PAPER 89-0849] p 91 A89-25616
- The international scope of data evaluation [DE85-005953] p 8 N85-30760
- Federal Mineral Land Information System p 70 N85-35459
- EPALIT: A data management system applied to the control and retrieval of technical reports [PB85-193068] p 94 N85-35828
- A comparative study of OCLC, Inc. and the Washington Library Network in twenty-nine Pacific Northwest academic libraries p 129 N86-15206
- Data set management p 24 N86-29285
- Managing federal information resources: Report under the Paperwork Reduction Act of 1980 [PB87-114136] p 12 N87-25876
- Microfilm and computer full text of archival documents [AD-A204055] p 103 N89-23377
- Data base development and research and additional support [NASA-CR-183249] p 89 N89-28440
- DATA STORAGE**
- Satellite data management for effective data access p 64 A86-38690
- Completion of cooperative data element dictionary of five federal agencies' systems for processing of technical report literature [AD-A130797] p 92 N84-11059
- Planetary Data Workshop, part 2 [NASA-CP-2343-PT-2] p 69 N84-34376
- General design considerations of an Air Force information system [AD-A150811] p 7 N85-23449
- Guidelines for submitting data to the National Space Science Data Center [NASA-TM-87500] p 23 N86-15209
- The geonames processing system functional design specification. Volume 4: Advanced symbol processing [AD-A161874] p 71 N86-24226
- Advanced techniques for the storage and use of very large, heterogeneous spatial databases. The representation of geographic knowledge: Toward a universal framework -- relations (mathematics) [NASA-CR-181517] p 39 N86-12421
- An innovative, multidisciplinary educational program in interactive information storage and retrieval: Presentation visuals [NASA-CR-184521] p 100 N89-14961
- The design of PC/MIS: A PC-based common user interface to remote information storage and retrieval systems [NASA-CR-184523] p 55 N89-14963
- The design of PC/MIS: A PC-based common user interface to remote information storage and retrieval systems. Presentation visuals [NASA-CR-184524] p 55 N89-14964
- Natural language query system design for interactive information storage and retrieval systems: Presentation visuals [NASA-CR-184526] p 87 N89-14966
- IUE archived spectra [NASA-TM-100715] p 101 N89-15829
- A database management capability for Ada p 77 N89-16371
- Computer technologies and institutional memory p 55 N89-20062
- Core knowledge system: Storage and retrieval of inconsistent information p 45 N89-23132
- Microfilm and computer full text of archival documents [AD-A204055] p 103 N89-23377
- DATA STRUCTURES**
- The automated information retrieval system in the field of science and science Policy-AWION [AD-A133565] p 66 N84-19174
- Advanced techniques for the storage and use of very large, heterogeneous spatial databases. The representation of geographic knowledge: Toward a universal framework -- relations (mathematics) [NASA-CR-181517] p 39 N86-12421
- SNePS considered as a fully intensional propositional semantic network p 27 N87-13183
- Artificial intelligence techniques for retrospective help in data analysis p 42 N89-13915
- Global updates in integration of distributed databases p 29 N89-15773
- Compiling high level constructs to distributed memory architectures [NASA-CR-181825] p 30 N89-24058
- A program interface prototype for a multimedia database incorporating images [AD-A206439] p 45 N89-24226
- DATA SYSTEMS**
- The Flight Service Automation System p 46 A84-44751
- Data dissemination and online numeric database systems p 62 A85-14170
- The pilot climate data system p 63 A86-20669
- The Consultative Committee for Space Data Systems (CCSDS) planned and potential use of the recommendations [IAF PAPER 86-303] p 1 N87-16003
- Satisfying the information requirements of an aircraft T&E center p 64 A87-49213
- A systems-approach to the design of the Eos data and information system p 64 A87-53207
- Data access for scientific problem solving p 19 A86-20252
- Information systems for shuttle processing: An enterprise approach p 2 A86-52358
- A system for management, display and analysis of oceanographic time series and hydrographic data p 65 A89-12863
- Toward a complete EOS data and information system p 66 A89-31841
- Planetary Data Workshop, part 2 [NASA-CP-2343-PT-2] p 69 N84-34376
- Database management p 69 N84-34377
- Networking p 21 N84-34381
- Data: A dictionary system and their role in information resource management [AD-A144905] p 6 N85-10859
- General design considerations of an Air Force information system [AD-A150811] p 7 N85-23449
- The international scope of data evaluation [DE85-005953] p 8 N85-30760
- Data set management p 24 N86-29285
- University participation via UNIDATA, part 1 p 72 N86-29296
- University participation via UNIDATA, part 2 p 72 N86-29296
- Network access to PCDS (SPAN, ESN, SESNET, ARPANET) p 24 N86-29296
- Methods of downloading to user institutions p 24 N86-29296
- ADRS: Automated Data Reduction System [NASA-CR-183438] p 89 N89-71278
- DATA TRANSFER (COMPUTERS)**
- Guidelines for exchanging computerized information [DE86-004736] p 13 N86-18510
- Protocol interoperability between DOD and ISO (Defense Data Network and International Organization for Standardization) protocols [AD-A206582] p 31 N89-26777
- DATA TRANSMISSION**
- Satellite information systems: Book p 19 A86-55015
- Compilation of cooperative data element dictionary of five federal agencies' systems for processing of technical report literature [AD-A130797] p 92 N84-11059
- Strategies and mechanisms for the diffusion of scientific and technical information: A comparative study p 82 N84-23406
- Project FIRST (Faculty Information and Research Service for Texas): Technical description of project and results [PB84-161629] p 67 N84-24501
- User's guide for an IBM PL/I implementation of the international standard organization DIS 6211 information processing specification for a data descriptive file for information interchange [ORNL/CSD-TM 207] p 6 N84-34188
- Text compression using word tokenization [DE86-000832] p 95 N86-19260
- Lewis Information Network (LIN): Background and overview [NASA-TM 100162] p 25 N86-11925
- Guidelines for exchanging computerized information [DE86-004736] p 13 N86-18510
- Integrating images: Applications and communications networks, volume 5 [AD-A195854] p 26 N86-30452
- Proceedings of the Scientific Data Compression Workshop [NASA-CP-3025] p 78 N89-22332
- Information transfer in Soviet science and engineering [RAND-R 2667-AR] p 80 N84-14361
- DECISION MAKING**
- Modeling and analysis of teams of interacting decisionmakers with bounded rationality p 57 A84-21544
- ARIADNE: A knowledge-based interactive system for planning and decision support p 57 A84-33463
- Developments in decision support systems p 57 A85-31782
- Information theoretic models of memory in human decisionmaking models [AD-P002883] p 51 N84-22844
- Prototype development of an information sharing and decision support system for the manpower personnel and training community [AD-P003310] p 68 N84-28451
- Effective organizational solutions for implementation of DBMS software packages p 5 N84-33268
- An evaluation of two reliability and maintainability information systems [AD-A143438] p 58 N84-33290
- The role of information technology in emergency management [GPO-29-457] p 60 N84-34318

- Management: bibliography for NASA managers (NASA-SP-7500(19)) p 83 N85-26439
Improving management decision processes through centralized communication linkages p 58 N86-15175
Telecommunications alternatives for federal users
Market trends and decisionmaking criteria (PB86-153764) p 23 N86-25687
Schema-based theory of information presentation for distributed decision making (AD-A163150) p 5F N86-25992
Management: A bibliography for NASA Managers (NASA-SP-7500(20)) p 85 N86-27108
Federal government information technology: Management, security and congressional oversight (PB86-205499) p 110 N87-12397
A study of organizational information search, acquisition, storage and retrieval (AD-A172063) p 98 N87-16650
Satisficing decision-making in supervisory control, part 2 (AD-A174631) p 59 N87-20128
Livermore risk analysis methodology: A quantitative approach to management of the risk associated with the operation of information systems (DE87-006828) p 110 N87-24232
Experiments on the cognitive aspects of information seeking and information retrieving (PB87-157699) p 38 N87-24238
Data integration for a scientific field experiment (DE87-011302) p 74 N87-30211
Management of complex information in support of evolving autonomous expert systems (AD-A186680) p 39 N88-17337
A personalized and prescriptive decision aid for choice from a database of options (AD-A188726) p 59 N88-20820
Strategic, organizational and standardization aspects of integrated information systems, volume 6 (AD-A195855) p 14 N88-30457
Automation of spacecraft control centers p 86 N89-10078
Decision-oriented strategic planning for information systems: Applying conceptual models of crisis decision-making to strategic planning for crisis management decision support systems p 15 N89-12486
Plan recognition, knowledge acquisition and explanation in an intelligent interface p 42 N89-13191
An architecture for integrating distributed and cooperating knowledge-based Air Force decision aids p 44 N89-19841
Information acquisition for model construction: An integrative, decision-theoretic perspective p 61 N89-21705
Aeronautical decision making: Cockpit resource management (AD-A205115) p 61 N89-22327
Structured requirements determination for information resources management (AD-A204764) p 62 N89-22532
Fostering interaction of government, defense, and aerospace databases p 103 N89-23374
On designing a case-based system for expert process development p 45 N89-24847
- DECISION THEORY**
A decision support system for cost-effectiveness analysis for control and security of computer systems (AD-A161388) p 58 N86-22134
Schema-based theory of information presentation for distributed decision making (AD-A163150) p 58 N86-25992
Information acquisition for model construction: An integrative, decision-theoretic perspective p 61 N89-21705
- DEEP SPACE NETWORK**
Knowledge-based network operations p 34 A89-33679
Network information management subsystem p 22 N85-27106
Deep space network resource scheduling approach and application p 86 N89-1770
- DEFENSE INDUSTRY**
Bibliographic networks and microcomputer applications for aerospace and defense scientific and technical information p 98 N87-19923
- DEFENSE PROGRAM**
State-of-the-art in computer security for DoD space systems (AIAA PAPER 86-2778) p 107 A87-18864
The use and value of Defense Technical Information Center products and services (AD-A130805) p 92 N84-11061
Improving the defense energy information system (DEIS) (AD-A153524) p 84 N85-29849
- The flow of scientific and technical information in the US Army Research Laboratories (AD-A155053) p 9 N85-33043
The integrated bibliographic information system: Resource sharing tailored for local needs (AD-A161700) p 95 N86-21431
The DOD gateway information system (AD-A161701) p 96 N86-21432
How Ebenezer Scrooge and Peter Drucker are helping shape DoD's Scientific and Technical Information Program (AD-A165640) p 96 N86-28779
The DOD gateway information system: Prototype experience (AD-A166200) p 97 N86-30570
Systematic corporate planning at DTIC (Defense Technical Information Center) (AD-A171525) p 11 N87-15902
Information analysis centers in the department of defense, revision (AD-A184302) p 98 N88-12420
CD-ROM (Compact Disc Read Only Memory) library of the future (AD-A197943) p 100 N89-14702
Information Management in the Department of Defense: The role of libraries (AD-A130345) p 80 N85-70560
Centers for analysis of scientific and technical information regulation (PB86-174315) p 104 N86-73104
- DEMOGRAPHY**
A user's guide to the socioeconomic environmental demographic information system (SEEDIS) (AD-A168917) p 73 N87-12388
- DEOXYRIBONUCLEIC ACID**
Simulation and analysis of physical mapping (DE89-009399) p 56 N89-23198
- DESIGN ANALYSIS**
Integrated structural analysis for rapid design support p 18 A88-18630
The integrated analysis capability (IAC Level 2.0) p 19 A89-12180
The Environment for Application Software Integration and Execution (EASIE) version 1.0: Volume 1: Executive overview (NASA-TM-100573) p 61 N89-21538
- DEVELOPING NATIONS**
Technology transfer for development of coastal zone resources: Caribbean experts examine critical issues p 77 N89-18749
- DIAGNOSIS**
Distributed knowledge base systems for diagnosis and information retrieval (AD-A170820) p 38 N87-15025
- DICTIONARIES**
Compilation of cooperative data element dictionary of five federal agencies' systems for processing of technical report literature (AD-A130797) p 92 N84-11059
An analysis of data dictionaries and their role in information resource management (AD-A152134) p 7 N85-27121
Rdesign: A data dictionary with relational database design capabilities in Ada p 43 N89-16368
A multimedia database management system supporting contents search in media data (AD-A207070) p 103 N89-26780
- DIGITAL DATA**
Critical issues in NASA information systems (NASA-CR-182380) p 13 N88-16577
- DIGITAL ELECTRONICS**
A database management system for computer-aided digital circuit design (AD-A206047) p 79 N89-24066
- DIGITAL SYSTEMS**
Integrated Terrain Access/Retrieval System p 62 A85-44992
Link performance data management and analysis system users manual (AD-A203605) p 88 N89-22356
A database management system for computer-aided digital circuit design (AD-A206047) p 79 N89-24066
- DIRECTORIES**
An online directory of databases for material properties (DE84-013210) p 68 N84-33099
The DOD gateway information system directory of resources (AD-A174154) p 25 N87-16658
- DISASTERS**
The role of information technology in emergency management (GPO-29-457) p 69 N84-34319
- DISKS (SHAPES)**
A user's guide for the BiBSORT program for the IBM PC personal computer (AD-A157936) p 94 N86-12995
- DISPLAY DEVICES**
An advanced media interface for control of modern transport aircraft navigational systems (AIAA PAPER 84-2686) p 46 A85-17865
Human factors of intelligent computer aided display design p 47 A87-12216
Effects of display proximity and memory demands on the understanding of dynamic multidimensional information p 48 A87-33044
Display units for online passage retrieval: A comparative analysis (DE84-001004) p 92 N84-25369
Implications of artificial intelligence for a user defined technical information system (AD-P003938) p 37 N85-11618
Sector suite man-machine functional capabilities and performance requirements (AD-A148881) p 52 N85-19647
Design of graphic displays in computerized systems (AD-A161890) p 71 N86-24227
The Remote Atmospheric Probing Information Display (RAPID) system (AD-A196314) p 75 N89-10500
Tools for data analysis management p 60 N89-13919
A data viewer for multivariate data p 28 N89-13921
Electronic data generation and display system p 61 N89-19891
Menuing and scrolling as alternative information management techniques (AD-A203029) p 88 N89-22524
- DISPOSAL**
Records Disposal: A guidebook for laboratory offices (AD-A156064) p 9 N85-35823
- DISTRIBUTED PARAMETER SYSTEMS**
Access control and privacy in large distributed systems (AIAA PAPER 86-2781) p 106 A87-18861
Access control and privacy in large distributed systems (NASA-TM-89397) p 110 N86-29568
- DISTRIBUTED PROCESSING**
Interconnecting heterogeneous database management systems p 18 A84-11197
A Distributed Sensor Architecture for advanced aerospace systems p 34 A89-26960
Method for accessing distributed heterogeneous databases p 67 N84-21412
The acquisition management information system: Friend or foe? (AD-P002751) p 67 N84-23298
Inductive information retrieval using parallel distributed computation (AD-A142712) p 36 N84-31050
NASA Administrative Data Base Management Systems, 1984 (NASA-CP-2323) p 82 N84-33266
Data Base Management: Proceedings of a conference (AD-A158285) p 85 N86-25999
Distributed knowledge base systems for diagnosis and information retrieval (AD-A170830) p 38 N87-15025
Data management of a multilaboratory field program using distributed processing (DE86-014770) p 73 N87-18485
Problem solving as intelligent retrieval from distributed knowledge sources p 39 N88-16392
Knowledge-based integrated information systems engineering: Highlights and bibliography Knowledge-Based Integrated Information Systems Engineering (KBISE) Project, volume 1 (AD-A195850) p 40 N86-30449
Advanced data management design for autonomous tele robotic systems in space using spacecraft symbolic processors p 41 A89-10096
Integrating distributed homogeneous and heterogeneous databases: Prototypes, volume 3 (AD-A195852) p 27 N89-10668
Computer science and technology: Guide to distributed database management (P88-201561) p 27 N89-11821
Resident database interfaces to the DAVID system, a heterogeneous distributed database management system (NASA-CR-184615) p 87 N89-14948
Global updates in integration of distributed databases p 29 N89-15773
On query processing in distributed database systems p 61 N89-15774
Distributing program entities in Ada p 29 N89-16295

- Compiling high level constructs to distributed memory architectures
[NASA-CR-181825] p 30 N89-24058
- Approaching distributed database applications using a programmable terminal emulator
[DE89-014831] p 31 N89-28309
- Resource contention management in parallel systems
[AD-A208808] p 32 N89-28332
- Secure distributed processing systems
[AD-A134935] p 111 N84-73042
- DOCUMENT STORAGE**
- Information retrieval strategies in a file-search environment
p 90 A84-44092
- Records Disposal: A guidebook for laboratory offices
[AD-A158064] p 9 N85-35823
- MARC (Machine Readable Catalog) format and life cycle tracking at the National Archives: A study
[PB87-126256] p 11 N87-21737
- Microfilm and computer full text of archival documents
[AD-A204055] p 103 N89-23377
- Proceedings of the 14th Annual Conference of the Department of Energy/Contractors Micrographics and Information Management Association
[DE88-000230] p 104 N88-70731
- Computer aided retrieval of vital records
p 80 N88-70735
- Problems of storing nonlinear documentation
p 80 N88-70736
- DOCUMENTATION**
- Idiot sheet - Preparing and using Database guide sheets
p 90 A85-24514
- A systems approach to ATE documentation
p 62 A85-26824
- A knowledge based system approach to document retrieval
p 32 A87-16706
- Paperwork Reduction Act amendments of 1983
[H-REPT-98-147] p 3 N84-11189
- Universal documentation system handbook - an introduction to the universal documentation system
[AD-A140172] p 5 N84-25742
- Recommended documentation for computer users at ANL
[DE84-016285] p 7 N85-15434
- National Archives and Records Service (NARS) twenty year preservation plan
[PB85-177640] p 84 N85-29654
- EPALIT: A data management system applied to the control and archival of technical reports
[PB85-193068] p 94 N85-35828
- Search and retrieval of office files using dBASE 3
[NASA-TM-88550] p 10 N86-30378
- Using bar code technology to enhance classified document accountability
[DE87-001760] p 98 N87-21739
- A hypertext writing environment and its cognitive basis
[AD-A188179] p 54 N88-18298
- Electronic data generation and display system
p 61 N89-19891
- Proceedings of the 14th Annual Conference of the Department of Energy/Contractors Micrographics and Information Management Association
[DE88-000230] p 104 N88-70731
- Using bar code technology to enhance classified document accountability
p 112 N88-70733
- Computer aided retrieval of vital records
p 80 N88-70735
- Problems of storing nonlinear documentation
p 80 N88-70736
- DOCUMENTS**
- The use and value of Defense Technical Information Center products and services
[AD-A130805] p 92 N84-11061
- Mechanized contract document preparation and abstract system
[AD-P002750] p 4 N84-43297
- Document interchange format
[PB84-217033] p 7 N85-16517
- Integrated library system at ORNL LION
[DE86-008867] p 97 N86-31448
- Application of new technologies to DTIC document processing
[AD-A189778] p 99 N88-22823
- Evaluating the effectiveness of information use
p 14 N89-11626
- Proceedings of the 14th Annual Conference of the Department of Energy/Contractors Micrographics and Information Management Association
[DE88-000230] p 104 N88-70731
- Using bar code technology to enhance classified document accountability
p 112 N88-70733
- Computer aided retrieval of vital records
p 80 N88-70735
- Problems of storing nonlinear documentation
p 80 N88-70736

- DREDGING**
- Use of a geographic information system (GIS) to improve planning for and control of the placement of dredged material
p 66 A89-41157
- DYNAMIC CHARACTERISTICS**
- Effects of display proximity and memory demands on the understanding of dynamic multidimensional information
p 45 A87-33044
- LORAN C Offshore Flight Following (LOFF) in the Gulf of Mexico
[AD-A197179] p 75 N89-12558
- DYNAMICAL SYSTEMS**
- Quick-look guide to the crustal dynamics project's data information system
[NASA-TM-87818] p 73 N87-23018
- An architecture for heuristic control of real-time processes
p 57 N89-26470

E

- EARTH (PLANET)**
- Earth and environmental science in the 1980's Part 1
Environmental data systems, supercomputer facilities and networks
[NASA-CR-4029] p 24 N87-16381
- EARTH CRUST**
- The second generation intelligent user interface for the crustal dynamics data information system - for NASA space missions
p 34 A89-21810
- Quick-look guide to the crustal dynamics project's data information system
[NASA-TM-87818] p 73 N87-23018
- The second generation intelligent user interface for the crustal dynamics data information system
p 40 N88-00352
- EARTH OBSERVATIONS (FROM SPACE)**
- Remote Sensing Information Sciences Research Group, Santa Barbara Information Sciences Research Group, year 3
[NASA-CR-197969] p 72 N86-32963
- The utilization of neural networks in populating an object-oriented database
p 45 N89-26599
- EARTH OBSERVING SYSTEM (EOS)**
- A systems approach to the design of the Eos data and information system
p 64 A87-53207
- Software aspects of earth observation
[AIAA PAPER 89-0779] p 65 A89-28460
- The EOS data and information system - Concepts for design
p 65 A89-31939
- Toward a complete EOS data and information system
p 66 A89-31941
- Knowledge-based image data management - An expert front-end for the BROWSE facility
p 35 A89-41158
- EARTH ORBITAL ENVIRONMENTS**
- Man-made space debris - Data needed for rational decision
p 2 A89-12107
- EARTH RESOURCES**
- Concepts for a global resources information system
p 18 A86-20668
- The potentials and challenges afforded by SPOT-1 data
p 65 A89-10945
- Corporate use of information regarding natural resources and environmental quality
[PB84-222726] p 69 N85-12794
- Critical issues in NASA information systems
[NASA-CR-182380] p 13 N88-16577
- ECONOMIC ANALYSIS**
- A user's guide to the socioeconomic environmental demographic information system (SEEDIG)
[AD-A163917] p 73 N87-12388
- Data integration for a scientific field experiment
[DE87-011302] p 74 N87-30211
- New technologies and intellectual property: An economic analysis
[N-2601-NSF] p 114 N88-10695
- ECONOMIC DEVELOPMENT**
- Policy implications of information technology
[PB84-133219] p 5 N84-31060
- ECONOMICS**
- Economic value of consumer information: A selected, annotated bibliography
[PB84-235795] p 7 N85-13673
- ECOSYSTEMS**
- NASA wetland data system
p 68 N84-31741
- EDITING ROUTINES (COMPUTERS)**
- A user's guide for the BIBSORT program for the IBM-PC personal computer
[AD-A157936] p 94 N86-12995
- Text compression using word tokenization
[DE86-000832] p 95 N86-19260
- A hypertext writing environment and its cognitive basis
[AD-A188179] p 54 N88-18298

- EDITSPEC** A FORTRAN 77 program for editing and manipulating spectral data from the Varian CARY 2390 UV-VIS-NIR spectrophotometer
[AD-A200352] p 29 N89-16389
- SIRE** A Simple Interactive Rule Editor for NICBES
p 78 N89-21730
- EDUCATION**
- Educational uses of the aerospace database
[AIAA PAPER 88-0749] p 107 A88-22566
- Examining learning theory of online information retrieval systems and applications in computer-aided instruction. Implications for the Defense Technical Information Center's computer-aided instruction
[AD-A159001] p 38 N86-15213
- USL/DBMS NASA/RECON working paper series Standards
[NASA-CR-184508] p 87 N89-14948
- Overview of the NASA/RECON educational, research, and development activities of the Computer Science Departments of the University of Southwestern Louisiana and Southern University
[NASA-CR-184509] p 100 N89-14949
- An innovative, multidisciplinary educational program in interactive information storage and retrieval. Presentation visuals
[NASA-CR-184521] p 100 N89-14961
- User's guide for the training database system, version 2.1
[DE88-016653] p 80 N89-70023
- EFFICIENCY**
- Maintenance Management Information and Control System (MMICS): Administrative boon or burden
[AD-A145762] p 83 N85-12790
- ELECTRIC CONTACTS**
- Developing a connector selection DEMS using NIAM (Nissan's Information Analysis Methodology)
[DE89-00165A] p 61 N89-15330
- ELECTRIC CURRENT**
- Peak power cost reduction guidebook
[NASA-CR-185020] p 17 N89-71009
- ELECTRIC POWER SUPPLIES**
- Peak power cost reduction guidebook
[NASA-CR-185020] p 17 N89-71009
- ELECTRIFICATION**
- Electronic information management and productivity
[DE85-013362] p 9 N85-35818
- ELECTROMAGNETIC INTERFERENCE**
- GPS/JTIDS compatibility - Global Positioning System/Joint Tactical Information Distribution System
p 63 A87-13537
- ELECTRONIC EQUIPMENT**
- Electronic information management and productivity
[DE85-013362] p 9 N85-35818
- Electronic information delivery at the job site
[DE89-009726] p 17 N89-27350
- ELECTRONIC MAIL**
- Space operations: Testing of NASA's technical and management information system
[GA/AMTEC-88-28] p 101 N89-20859
- EMERGENCIES**
- The role of information technology in emergency management
[GPO-29-457] p 69 N84-34319
- Design of a scientific information collaboration and dissemination system, volumes 1 thru 3
[AD-A146002] p 69 N85-12791
- EMISSION SPECTRA**
- Design and development of a database for spectral data and analysis results
[DE87-011323] p 74 N88-11564
- EMPLOYEE RELATIONS**
- Implementation of multifunction information systems at three Navy facilities
[AD-A157797] p 84 N86-16153
- END-TO-END DATA SYSTEMS**
- Space Station data system analysis/architecture study Task 1. Functional requirements definition, DR-5
[NASA-CR-177838] p 23 N86-20473
- ENERGY CONSERVATION**
- Improving the defense energy information system (DEIS)
[AD-A153524] p 84 N85-29849
- ENERGY CONSUMPTION**
- Improving the defense energy information system (DEIS)
[AD-A153524] p 84 N85-29849
- Peak power cost reduction guidebook
[NASA-CR-185020] p 17 N89-71009
- ENERGY POLICY**
- Department of Energy's activities to limit distribution of certain unclassified scientific and technical information
[PB84-189158] p 109 N84-32302
- ENERGY TECHNOLOGY**
- Executive information system
[DE84-015355] p 83 N85-13675

ENGINEERING MANAGEMENT

- Management information system for engineering
[DE84-001655] p 81 N84-14984
- Automated knowledge base development from
CAD/CAE databases p 43 N89-15585
- ENGINES**
- Risk assessment of compressed natural gas-fueled
vehicle operations, phase 1
[PB89-188841] p 104 N39-27196
- ENGLISH LANGUAGE**
- A contextual postprocessing expert system for English
sentence reading machines
[AD-A163951] p 96 N86-26026
- Using English for indexing and retrieving
[AD-A202227] p 101 N89-20866
- ENVIRONMENT EFFECTS**
- Earth and environmental science in the 1980's Part 1
Environmental systems, supercomputer facilities and
networks
[NASA-CR-4029] p 24 N87-16381
- ENVIRONMENTAL MANAGEMENT**
- Design, test, and evaluation of an Air Force
environmental model and data exchange
[AD-A143226] p 68 N84-33060
- GEO-EAS (Geostatistical Environmental Assessment
Software) user's guide
[PB89-151252] p 89 N89-27261
- ENVIRONMENTAL MODELS**
- NASA pilot land data system p 68 N84-31741
- ENVIRONMENTAL MONITORING**
- Concept for a satellite-based global reserve monitoring
system p 66 A89-41152
- GEO-EAS (Geostatistical Environmental Assessment
Software) user's guide
[PB89-151252] p 89 N89-27261
- Bangladesh Agro-Climatic Environmental Monitoring
Project p 79 N89-28121
- ENVIRONMENTAL QUALITY**
- Corporate use of information regarding natural resources
and environmental quality
[PB84-222736] p 69 N85-12794
- ENVIRONMENTS**
- A hypertext writing environment and its cognitive basis
[AD-A188179] p 54 N88-18298
- ERRORS**
- An experimental investigation into software reliability
[AD-A206293] p 30 N89-24069
- ERS-1 (ESA SATELLITE)**
- Legal problems posed by the commercialization of data
collected by the European Remote Sensing Satellite
ERS-1 p 113 A89-33030
- EUROPEAN SPACE AGENCY**
- Searching the PASCAL database - A user's
perspective p 92 A89-45650
- EVALUATION**
- Services for the analysis and evaluation of information
[PB84-104504] p 51 N84-18113
- A comparative study of OCLC, Inc. and the Washington
Library Network in twenty-nine Pacific Northwest academic
libraries p 109 N86-15208
- Evaluating for information center planning
p 15 N89-11632
- EXPERT SYSTEMS**
- ARIADNE - A knowledge-based interactive system for
planning and decision support p 57 A84-33463
- Developments in decision support systems
p 57 A85-31792
- EXAMINE - An expert system to mediate
human-computer dialogs p 47 A88-23740
- Incorporating knowledge rules in a semantic data model
- An approach to integrated knowledge management
p 32 A87-16697
- A knowledge based system approach to document
retrieval p 32 A87-16706
- Evaluation of expert systems - An approach and case
study - of determining software functional requirements
for command management of satellites
p 48 A87-16716
- A data analysis expert system for large established
distributed databases p 33 A89-11718
- Experiments with temporal reasoning applied to analysis
of telemetry data -- for Space Station automation
p 65 A89-11809
- An approach to autonomous attitude control for
spacecraft
[AAS PAPER 88-004] p 33 A89-20833
- 1988 Goddard Conference on Space Applications of
Artificial Intelligence, Greenbelt, MD, May 24, 1988,
Proceedings p 33 A89-21801
- Artificial intelligence costs, benefits, and risks for
selected spacecraft ground system automation
scenarios p 33 A89-21803
- The second generation intelligent user interface for the
crustal dynamics data information system -- for nasa space
missions p 34 A89-21810

- Automated cataloging and characterization of
space-derived data p 91 A89-21812
- Applications of artificial intelligence VI, Proceedings of
the Meeting, Orlando, FL, Apr 4-6, 1988
[SPIE-937] p 34 A89-33677
- Knowledge-based network operations
p 34 A89-33679
- Use of a geographic information system (GIS) to improve
planning for and control of the placement of dredged
material p 66 A89-41157
- Knowledge-based image data management - An expert
front-end for the BROWSE facility p 35 A89-41158
- ExpertVision - A video-based non-contact system for
motion measurement p 35 A89-45136
- A pilot's view of intelligent systems
p 50 A89-45294
- Memory-based expert systems
[AD-A145612] p 37 N85-11628
- A contextual postprocessing expert system for English
sentence reading machines
[AD-A163951] p 96 N86-26026
- The role of databases in knowledge-based systems
[AD-A166365] p 38 N86-30573
- The development of a prototype intelligent user interface
subsystem for NASA's scientific database systems
[NASA-TM-87821] p 53 N87-24098
- Intelligent data management p 53 N87-29132
- Problem solving as intelligent retrieval from distributed
knowledge sources p 39 N88-16392
- The intelligent user interface for NASA's advanced
information management systems p 39 N88-16424
- Management of complex information in support of
evolving autonomous expert systems
[AD-A186680] p 39 N88-17337
- Methods of eliciting information from experts
[AD-A187468] p 54 N88-18189
- The second generation intelligent user interface for the
crustal dynamics data information system
p 34 A89-21810
- Automated cataloging and characterization of
space-derived data p 13 N88-30354
- Knowledge-based integrated information systems
engineering Highlights and bibliography
Knowledge-Based Integrated Information Systems
Engineering (KBIIE) Project, volume 1
[AD-A195850] p 40 N88-30449
- Technical opinions regarding knowledge-based
integrated information systems engineering, volume 8
[AD-A195857] p 40 N88-30454
- Knowledge-Based Integrated Information Systems
Development Methodologies Plan Knowledge-Based
Integrated Information Systems Engineering (KBIIE)
report, volume 2
[AD-A195851] p 41 N88-30455
- Information retrieval systems evolve advances for easier
and more successful use p 100 N88-30462
- Space station Platform Management System (PMS)
replanning using resource envelopes p 86 N89-10071
- Automation of spacecraft control centers
p 86 N89-10078
- Advanced data management design for autonomous
telebot systems in space using spaceborne symbolic
processors p 41 N89-10096
- Object-oriented approach to integrating database
semantics, volume 4
[AD-A195853] p 41 N89-10672
- Computer architectures for very large knowledge
bases p 41 N89-12294
- SNePS considered as a fully intensional propositional
semantic network p 27 N89-13184
- Planner system for the application of indications and
warning p 42 N89-13188
- Computer Science and Statistics Proceedings of the
18th Symposium on the Interface
[AD-A191296] p 28 N89-13901
- The NC (Numerically Controlled) assistant Interfacing
knowledge based manufacturing tools to CAO/CAM
systems
[DE88-016742] p 42 N89-14709
- USL/DBMS NASA/RECON working paper series
Standards
[NASA-CR-184508] p 87 N89-14948
- Knowledge based systems A critical survey of major
concepts, issues, and techniques
[NASA-CR-184517] p 42 N89-14957
- Spacecraft environmental anomalies expert system
p 43 N89-15607
- Proceedings of the Workshop on AI (Artificial
Intelligence), and Distributed Problem Solving
[PB88-224852] p 44 N89-16400
- Information management expert systems
p 87 N89-16407
- An architecture for integrating distributed and
cooperating knowledge-based Air Force decision aids
p 44 N89-19841
- SARSCEST (human factors) p 55 N89-19890

- Electronic data generation and display system
p 61 N89-19891
- Computer technologies and institutional memory
p 55 N89-20062
- An expert system based intelligent control scheme for
space bioreactors p 44 N89-20285
- Applying expertise to data in the Geologist's Assistant
expert system
[DE89-003463] p 44 N89-20574
- Use of artificial intelligence in supervisory control
p 44 N89-20694
- Intent inferencing with a model-based operator's
associate
[REPT-88-2] p 56 N89-20695
- OFMTutor An operator function model intelligent
tutoring system p 56 N89-20696
- A survey of intelligent tutoring systems Implications for
complex dynamic systems p 56 N89-20697
- SIRE A Simple Interactive Rule Editor for NICBES
p 78 N89-21730
- Core knowledge system Storage and retrieval of
inconsistent information p 45 N89-23132
- On designing a case-based system for expert process
development p 45 N89-24847
- TRUSS An intelligent design system for aircraft wings
p 79 N89-25162
- An expert system to facilitate selecting a database
management system
[DE89-012350] p 45 N89-25774
- An architecture for heuristic control of real-time
processes p 57 N89-26470
- The 1989 Goddard Conference on Space Applications
of Artificial Intelligence
[NASA-CP-3033] p 45 N89-26578
- An intelligent user interface for browsing satellite data
catalogs p 79 N89-26601
- Natural language processing and advanced information
management p 88 N89-26602
- EXPLOSIVES**
- SAFEORD Safety of explosive ordnance databank
[AD-A154058] p 70 N85-30972

F

- FABRICATION**
- Computer-aided fabrication system implementation
[AD-A203651] p 88 N89-21576
- FACILITIES**
- Implementation of multifunction information systems at
three Navy facilities
[AD-A157797] p 84 N86-16153
- FACTORIAL DESIGN**
- An experimental investigation into software reliability
[AD-A206293] p 30 N89-24069
- FAILURE ANALYSIS**
- The 1989 Goddard Conference on Space Applications
of Artificial Intelligence
[NASA-CP-3033] p 45 N89-26578
- FAULT TOLERANCE**
- An evaluation methodology for dependable
multiprocessors
[AD-A192799] p 26 N88-26863
- Distributing program entities in Ada
p 29 N89-16295
- FEASIBILITY ANALYSIS**
- The Shared Bibliographic Input Network (SBIN) A
summary of the experiment
[AD-A133001] p 104 N84-75065
- Guidelines for certification of existing sensitive
systems
[NASA-CR-174080] p 111 N85-70325
- FEDERAL BUDGETS**
- Requirements analysis for forward funding tracking
system, volume 1
[AD-A136840] p 81 N84-20425
- Department of Energy's activities to limit distribution of
certain unclassified scientific and technical information
[PB84-189158] p 109 N84-32302
- FIBER OPTICS**
- Information technology R and D Critical trends and
issues
[PB85-245660] p 10 N86-19960
- FIGHTER AIRCRAFT**
- Pilots wary of tactical information systems
p 62 A85-41058
- A pilot's view of intelligent systems
p 50 A89-45294
- FILE MAINTENANCE (COMPUTERS)**
- Algorithm 607 - Text exchange system A transportable
system for management and exchange of programs and
other text p 18 A84-44325
- A systems approach to ATE documentation
p 62 A85-26824
- Computer architecture for a surrogate file to a very large
data/knowledge base p 91 A87-34522

FINANCIAL MANAGEMENT

Guidelines for development of NASA (National Aeronautics and Space Administration) computer security training programs [NASA-CR-173562] p 108 N84-26318

FLIGHT CONDITIONS

The Flight Service Automation System p 46 A84-44751

FLIGHT CONTROL

Investigation of air transportation technology at Princeton University, 1983 p 38 N87-18528

FLIGHT CREWS

Automated Information Management Technology (AIM-TECH). Considerations for a technology investment strategy [AD-A161139] p 38 N86-20173
Development of a computer-managed readiness assessment system [AD-A162931] p 71 N86-24215

FLIGHT MANAGEMENT SYSTEMS

Cockpit information management through an intelligent pilot/vehicle interface [AIAA PAPER 89-2096] p 50 A89-49456

FLIGHT MECHANICS

ExpertVision - A video-based non-contact system for motion measurement p 35 A89-45136

FLIGHT SAFETY

Fallible humans and vulnerable systems - Lessons learned from aviation p 50 A88-46511
Aeronautical decision making Cockpit resource management [AD-A205115] p 61 N89-22327

FLIGHT SIMULATORS

Flight stations and offices of the future - How similar will they be p 46 A84-19282

FLIGHT TESTS

Satisfying the information requirements of an aircraft T&E center p 64 A87-49213

FLIGHT TRAINING

Development of a computer-managed readiness assessment system [AD-A162931] p 71 N86-24215

FLOW DISTRIBUTION

Development and validation of an advanced low-order panel method [NASA-TM-101024] p 75 N89-12554

FLUID MANAGEMENT

Space station integrated propulsion and fluid systems study [NASA-CR-179393] p 75 N89-12581

FORMAT

Notes for medical catalogers, 1983 [PB84-195874] p 6 N84-33296
Document interchange format [PB84-217033] p 7 N85-16517
Design of an interface to an information retrieval network [AD-A205115] p 61 N89-22327
Description of a tentative US-USSR common communication format [DE86-004676] p 96 N86-25681
GRAPS (Graphical Plotting System) user's guide A graphical plotting system for displaying scientific and engineering data [AD-A202583] p 77 N89-21559
Menuing and scrolling as alternative information management techniques [AD-A203029] p 88 N89-22524
A program interface prototype for a multimedia database incorporating images [AD-A206439] p 45 N89-24226

FORTRAN

ELEFUNT test results under FORTRAN-PLUS on the active memory technology DAP 510-8 [DE88-017264] p 28 N89-14700
EDITSPEC A FORTRAN 77 program for editing and manipulating spectral data from the Vanan CARY 2390 UV-VIS-NIR spectrophotometer [AD-A200352] p 29 N89-16389

FUNCTIONAL DESIGN SPECIFICATIONS

Space Station data system analysis/architecture study Task 1. Functional requirements definition, DR-5 [NASA-CR-177838] p 23 N86-20473
Functional description and formal specification of a generic gateway [AD-A206581] p 31 N89-26776

FUNCTIONS

DLA. Data/data base administration analysis [AD-A153031] p 8 N85-28879

G

GASES

On-line interactive database for the storage and rapid information retrieval of gas industry data [T186-900895] p 96 N86-28792

GATES (CIRCUITS)

Functional description and formal specification of a generic gateway [AD-A206581] p 31 N89-26776

GENERAL AVIATION AIRCRAFT

The Flight Service Automation System p 46 A84-44751

GENETIC CODE

Simulation and analysis of physical mapping [DE89-009399] p 56 N89-23196

GENETIC ENGINEERING

Simulation and analysis of physical mapping [DE89-009399] p 56 N89-23196

GEODESY

Integrated database approach for geodetic applications [DE88-012726] p 75 N89-11615

GEODETIC SURVEYS

Integrated database approach for geodetic applications [DE88-012726] p 75 N89-11615

GEODYNAMICS

Quick-look guide to the crustal dynamics project's data information system [NASA-TM-87818] p 73 N87-23018

GEOGRAPHIC INFORMATION SYSTEMS

Concepts for a global resources information system p 18 A86-20668
Use of a geographic information system (GIS) to improve planning for and control of the placement of dredged material p 66 A89-41157
Air Force geographic information and analysis system [DE88-001420] p 74 N88-18505

GEOGRAPHY

The geonames processing system functional design specification. Volume 4. Advanced symbol processing [AD-A161874] p 71 N86-24226
A user's guide to the socioeconomic environmental demographic information system (SEEDIS) [AD-A168917] p 73 N87-12388
Advanced techniques for the storage and use of very large, heterogeneous spatial databases. The representation of geographic knowledge: Toward a universal framework -- relations (mathematics) [NASA-CR-181517] p 39 N88-12421

GEOLOGICAL SURVEYS

Federal Mineral Land Information System p 70 N85-35459
User interface design for two dimensional polygonally encoded geological survey maps [AD-A170612] p 53 N87-13840

GEOLOGY

State of the art of geoscience libraries and information services [DE86-011188] p 97 N86-33207
Applying expertise to data in the Geologist's Assistant expert system [DE89-003483] p 44 N89-20574
Developing a geologic and engineering properties data base with INGRES [DE89-013520] p 79 N89-27593

GEOMETRIC RECTIFICATION (IMAGERY)

Managing geometric information with a data base management system p 67 N84-22211

GEOMETRY

Managing geometric information with a data base management system p 67 N84-22211
Planetary Data Workshop, part 2 [NASA-CP-2343-PT-2] p 69 N84-34376

GEOPHYSICS

Air Force Geophysics Laboratory management information system study [AD-A161910] p 85 N86-24561
State of the art of geoscience libraries and information services [DE86-011188] p 97 N86-33207

GLOBAL POSITIONING SYSTEM

GPS/JTIDS compatibility -- Global Positioning System/ Joint Tactical Information Distribution System p 63 A87-13537

GOALS

Defending secrets, sharing data New locks and keys for electronic information [PB88-143185] p 111 N88-20210

GOVERNMENT PROCUREMENT

Mechanized contract document preparation and abstract system [AD-P002750] p 4 N84-23297
Planning and controlling the acquisition costs of Air Force information systems [AD-A204421] p 16 N89-22528

GOVERNMENT/INDUSTRY RELATIONS

US government policies and hypersonic flight in the 21st century p 3 A89-41654
Paperwork Reduction Act of 1980 [S-REPT-98-479] p 4 N84-24504

Legal considerations and cooperative opportunities for space commercial activities p 113 N85-11013

TECHNOLOGY TRANSFER

[GPO-49-539] p 114 N86-21458

GOVERNMENTS

Paperwork Reduction Act amendments of 1983 [H-REPT-96-147] p 3 N84-11989
Scientific and technical information system for the Washington State Legislature [PB84-100650] p 66 N84-18112
Department of Energy's activities to limit distribution of certain unclassified scientific and technical information [PB84-189158] p 109 N84-32302
Implementation of multifunction information systems at three Navy facilities [AD-A157797] p 84 N86-16153
Managing federal information resources. Report under the Paperwork Reduction Act of 1980 [PB86-247682] p 10 N86-25299
Federal government information technology: Management, security and congressional oversight [PB86-205499] p 110 N87-12397
Managing federal information resources. Report under the Paperwork Reduction Act of 1980 [PB87-114138] p 12 N87-25878
Research and development of models and instruments to define, measure, and improve shared information processing within government oversight agencies [DE87-012473] p 12 N87-29371
Federal information resources management: Bridging vision and action p 15 N89-12488
Emerging issues on managing information resources p 17 N85-70782

GRAMMARS

Inquiry semantics: A functional semantics of natural language grammar [AD-A135153] p 36 N84-17929
A computer-based specification methodology p 101 N89-16301

GRAPHIC ARTS

Design of graphic displays in computerized systems [AD-A161890] p 71 N86-24227
Satisficing decision-making in supervisory control, part 2 [AD-A174631] p 59 N87-20128
A multimedia database management system supporting contents search in media data [AD-A207070] p 103 N89-26780

GRAPHS (CHARTS)

Implications of the language of data for computing systems p 28 N89-13911

GROUND BASED CONTROL

Key considerations in contingency planning for secure space flight ground control centers p 105 A85-42596

GROUND STATIONS

Key considerations in contingency planning for secure space flight ground control centers p 105 A85-42596
Security engineering of secure ground stations p 105 A85-42598

GROUND SUPPORT EQUIPMENT

Artificial intelligence costs, benefits, and risks for selected spacecraft ground system automation scenarios p 33 A89-21803

GROUND SUPPORT SYSTEMS

The man-machine interface in computerized telemetry systems p 46 A84-32429
Security engineering of secure ground stations p 105 A85-42598

GROUP DYNAMICS

Influences on group productivity 2 Factors inherent in the person A bibliographic synopsis [AD-A131015] p 50 N84-15790

H

HABITABILITY

The Pilot Land Data System Report of the Program Planning Workshops [NASA-TM-86250] p 6/ N84-26468

HANDBOOKS

Life cycle management handbook [DE89-004315] p 15 N89-17545

HELICOPTER DESIGN

Advanced helicopter cockpit information management p 49 A88-35376

HETEROGENEITY

Influences on group productivity 2 Factors inherent in the person A bibliographic synopsis [AD-A131015] p 50 N84-15790

HEURISTIC METHODS

An architecture for heuristic control of real-time processes p 57 N89-26470
An intelligent user interface for browsing satellite data catalogs p 79 N89-26601

HIERARCHIES

- A contextual postprocessing expert system for English sentence reading machines
[AD-A183951] p 96 N86-26026
- The language of data. A general theory of data
p 86 N89-13912
- Conversion of mass storage hierarchy in an IBM computer network
[AD-A208520] p 31 N89-28330
- HIGH LEVEL LANGUAGES**
- Advanced computing systems. An advanced reasoning-based development paradigm for Ada trusted systems and its application to MACH
[AD-A206308] p 45 N89-24070
- HISTORIES**
- The international scope of data evaluation
[DE85-005953] p 8 N85-30760
- Information management expert systems
p 67 N89-16407
- HUMAN BEHAVIOR**
- Interactive information environments. A plan for enabling interdisciplinary research
[RANO/N-2115] p 6 N84-33284
- Evaluation of the National Library of Medicine's programs in the medical behavior sciences. Online searchers' reactions to database and vendor capabilities in the Medical Behavioral Sciences (MBS), study 4
[PB84-230523] p 93 N85-12798
- HUMAN BEINGS**
- Beyond associations. Strategic components in memory retrieval
[AD-A180783] p 52 N86-18985
- Interactive activation models of perception and comprehension
[AD-A181362] p 52 N86-21143
- Man-machine systems of the 1990 decade. Cognitive factors and human interface issues
[AD-A163865] p 52 N86-25123
- Methods of eliciting information from experts
[AD-A187468] p 54 N88-18189
- HUMAN FACTORS ENGINEERING**
- Flight stations and offices of the future. How similar will they be
p 46 A84-19282
- Pilots wary of tactical information systems
p 32 A85-41058
- Human Factors Society. Annual Meeting, 29th, Baltimore, MD, September 29-October 3, 1985, Proceedings, Volumes 1 & 2
p 47 A86-33776
- Human factors of intelligent computer aided display design
p 47 A87-12216
- Man/System Integration Standards for space systems
p 48 A87-33020
- The model human processor - An engineering model of human performance
p 49 A87-33532
- Human Factors Society. Annual Meeting, 31st, New York, NY, Oct. 19-23, 1987, Proceedings Volumes 1 & 2
p 49 A88-35401
- Advanced human factors engineering tool technologies
p 49 A88-35418
- Human factors impact on the V-22 Osprey cockpit development - An overview
p 50 A89-18865
- Modeling the user in intelligent user interfaces
[DE84-012664] p 50 N84-14795
- Guide to the development of a human factors engineering data retrieval system
[AD-A136918] p 51 N84-20187
- Human engineering guidelines for management information systems. Change 1
[AD-A137808] p 81 N84-21104
- A natural language interface for a PROLOG database
[AD-A138071] p 51 N84-22254
- Management information systems: A need for human factors
[AD-P003313] p 51 N84-26452
- Annotated bibliography of human factors laboratory reports (1945-1988) Supplement 4, 1979-1983
[AD-A142141] p 51 N84-29481
- A management workstation concept
[AD-A145617] p 83 N85-11906
- Guide to human factors information sources
[AD-A149102] p 52 N85-19649
- Development of a user support package for CPESIM 2 (a computer simulation for CPE (Computer Performance Evaluation) use
[AD-A151899] p 22 N85-26170
- NASA Information Sciences and Human Factors Program
[NASA-TM-87569] p 53 N87-22410
- Artificial intelligence developments re DOD Gateway Information System (DGIS) and Defense Applied Information Technology Center (DAITC)
[AD-A181101] p 111 N87-27550
- Advanced human factors engineering tool technologies
[AD-A189390] p 54 N88-20825
- SARSCEST (human factors)
p 55 N89-19890

- Aeronautical decision making. Cockpit resource management
[AD-A205115] p 61 N89-22327
- A systematic approach to human factors measurement
[AD-A132423] p 57 N84-71658
- HUMAN PERFORMANCE**
- Strategy and optimization in human information processing
p 48 A87-33502
- The model human processor - An engineering model of human performance
p 49 A87-33532
- Fallible human and vulnerable systems - Lessons learned from aviation
p 50 A88-46511
- The user's mental model of an information retrieval system. Effects on performance
p 51 N84-32275
- A systematic approach to human factors measurement
[AD-A132423] p 57 N84-71658
- HUMAN REACTIONS**
- Technology transfer primer
[PB86-205341] p 73 N87-12404
- HYDROCARBONS**
- Thermodynamics of materials in the range C10-C16 data base reference manual
[DE88-001244] p 76 N89-16018
- HYDROGRAPHY**
- A system for management, display and analysis of oceanographic time series and hydrographic data
p 65 A89-12863
- Federal Mineral Land Information System
p 70 N85-35459
- HYPERCUBE MULTIPROCESSORS**
- Concurrent Image Processing Executive (CIPE)
[NASA-CR-185460] p 31 N89-25619
- Implementation of a hypercube database system
[DE89-010474] p 88 N89-26413
- HYPERSONIC FLIGHT**
- U.S. government policies and hypersonic flight in the 21st century
p 3 A89-41654
- IBM COMPUTERS**
- IBM's token-ring LAN (Local-Area Network) A base-level communications solution
[AD-A143446] p 21 N84-33063
- Guide to sharing personal computer resources via local area networks, revised
[DE86-016088] p 25 N87-20772
- The IBM PC at NASA Ames
p 16 N89-18392
- Conversion of mass storage hierarchy in an IBM computer network
[AD-A208520] p 31 N89-28330
- IMAGE ANALYSIS**
- Applications of artificial intelligence VI. Proceedings of the Meeting, Orlando, FL, Apr 4-6 1988
[SPIE-937] p 34 A89-33677
- Knowledge-based image data management - An expert front-end for the BROWSE facility
p 35 A89-41158
- IMAGE PROCESSING**
- The Land Analysis System (LAS) - A general purpose system for multispectral image processing
p 64 A87-53230
- 1988 Goddard Conference on Space Applications of Artificial Intelligence, Greenbelt, MD, May 24, 1988, Proceedings
p 33 A89-21801
- VLSI architectures for pattern analysis and image database management
p 20 N84-19163
- Planetary Data Workshop, part 2
[NASA-CP-2343-PT-2] p 69 N84-34376
- A model for graphics interface tool development
p 70 N85-34545
- A contextual postprocessing expert system for English sentence reading machines
[AD-A163951] p 96 N86-26026
- Remote Sensing Information Sciences Research Group, Santa Barbara Information Sciences Research Group, year 3
[NASA-CR-179769] p 72 N86-32863
- Air Force geographic information and analysis system
[OE88-001420] p 74 N88-18505
- The Remote Atmospheric Probing Information Display (RAPID) system
[AD-A196314] p 75 N89-10500
- Three-dimensional computer graphics brain-mapping project
[AD-A197053] p 41 N89-11435
- Proceedings of the Scientific Data Compression Workshop
[NASA-CP-3025] p 78 N89-22332
- Concurrent Image Processing Executive (CIPE)
[NASA-CR-185460] p 31 N89-25619
- The 1989 Goddard Conference on Space Applications of Artificial Intelligence
[NASA-CP-3033] p 45 N89-26578

IMAGES

- Content-Addressable Memory manager. Design and evaluation
[AD-A164037] p 23 N86-25133
- IMAGING TECHNIQUES**
- Applications of multispectral video for natural resource assessment
p 65 A89-10968
- Proceedings of the Scientific Data Compression Workshop
[NASA-CP-3025] p 78 N89-22332
- Microfilm and computer full text of archival documents
[AD-A204055] p 103 N89-23377
- A program interface prototype for a multimedia database incorporating images
[AD-A206439] p 45 N89-24226
- IMPACT LOADS**
- Sandia computerized shock compression bibliographical database
[DE85-018542] p 70 N86-17222
- INDEXES (DOCUMENTATION)**
- An overview of the USL/DBMS NASA/PC R and O project working paper series
[NASA-CR-184533] p 15 N89-14973
- Problems of storing nonlinear documentation
p 80 N88-70736
- INDUSTRIAL MANAGEMENT**
- Paperwork Reduction Act of 1980
[S-REPT-98-479] p 4 N84-24504
- INDUSTRIAL PLANTS**
- Success with Data Management 4 at the DOE Pinellas Plant
[DE84-008021] p 82 N84-29802
- INDUSTRIAL SAFETY**
- Annotated bibliography of publications dealing with occupational health and medical information systems, cost analysis procedures, evaluation methodology and related legal issues
[AD-A156650] p 94 N86-11078
- INDUSTRIES**
- On-line interactive database for the storage and rapid information retrieval of gas industry data
[TI86-900895] p 96 N86-28792
- INFERENCE**
- Knowledge retrieval as specialized inference
[AD-A189042] p 39 N88-20899
- INFORMATION**
- Information theoretic models of memory in human decisionmaking models
[AD-P002883] p 51 N84-22844
- Technology transfer is opportunity transfer
[DE85-016622] p 114 N86-17230
- Evaluating the effectiveness of information use
p 14 N89-11626
- Evaluating the performance of information center staff
p 14 N89-11629
- Evaluating performance of information center operations and services
p 14 N89-11630
- A framework for evaluating the effectiveness of information centers and services
p 14 N89-11631
- Evaluating for information center planning
p 15 N89-11632
- Implications of the language of data for computing systems
p 28 N89-13911
- The language of data. A general theory of data
p 86 N89-13912
- Egyptian National System for Scientific and Technical Information. Design study
[PB84-179423] p 80 N84-75267
- INFORMATION DISSEMINATION**
- Data dissemination and online numeric database systems
p 62 A85-14170
- DOD information analysis centers - Their resources and availability
[AIAA PAPER 89-0850] p 91 A89-25619
- Information systems, security and privacy
[RANO/P-6930] p 107 N84-21402
- Strategies and mechanisms for the diffusion of scientific and technical information. A comparative study
p 82 N84-23406
- Department of Energy's activities to limit distribution of certain unclassified scientific and technical information
[PB84-189158] p 109 N84-32502
- An online directory of databases for material properties
[DE84-013210] p 68 N84-33099
- A decade of accomplishment
[ISSN-0091-2972] p 93 N84-33283
- Design of a scientific information collation and dissemination system, volumes 1 thru 3
[AD-A146002] p 69 N85-12791
- Economic value of consumer information. A selected, annotated bibliography
[PB84-235795] p 7 N85-13673
- Computer and communications security and privacy
[GPO-39-741] p 109 N85-21994

- Evaluating the appropriateness of microcomputers for litigation document management using the analytic hierarchy process p 69 N85-24786
- The flow of scientific and technical information in the US Army Research Laboratories [AD-A155050] p 9 N85-33043
- Keeping the nation's secrets: A report to the Secretary of Defense by the Commission to Review DoD Security Policies and Practices [AD-A161998] p 110 N86-24562
- Managing federal information resources: Report under the Paperwork Reduction Act of 1980 [PB86-247682] p 10 N86-25299
- Carbon Dioxide Information Center FY 1985 [DE86-004654] p 72 N86-26245
- Technology transfer at DARPA: The Defense Advanced Research Projects Agency. Executive summary [AD-A164503] p 10 N86-27110
- Public laws of the 96th Congress relating to information policy [CRS-TK-7865-F] p 114 N86-27130
- Information services. Pros and cons p 97 N86-26797
- The DoD gateway information system. Prototype experience [AD-A166200] p 97 N86-30570
- Freedom of Information Act. Noncompliance with affirmative disclosure provisions [AD-A166589] p 10 N86-33204
- Federal government information technology management, security and congressional oversight [PB86-205499] p 110 N87-12397
- Technology transfer primer [PB86-205341] p 73 N87-12404
- MARC (Machine Readable Catalog) format and life cycle tracking at the National Archives: A study [PB87-126256] p 11 N87-21737
- Managing federal information resources: Report under the Paperwork Reduction Act of 1980 [PB87-114136] p 12 N87-25878
- Benefits of scientific and technical information services for aerospace and defense p 96 N87-26577
- Computer resource management technology program (PE 64740F). Task no. 6: Advanced user authentication [PB86-183066] p 111 N86-25183
- Evaluating the effectiveness of information use p 14 N89-11626
- Evaluating the performance of information centre staff p 14 N89-11629
- Evaluating performance of information centre operations and services p 14 N89-11630
- An overview of the USL/DBMS NASA/PC R and D project working paper series [NASA-CR-184533] p 15 N89-14973
- Space data management at the NSSDC (National Space Sciences Data Center) Applications for data compression p 102 N89-22334
- Technical report literature in chemistry and engineering: Bibliometric and content analysis p 102 N89-22525
- Identifying users and how to reach them p 102 N89-23370
- Information transfer in Soviet science and engineering [RAND-R-2667-ARPA] p 80 N84-74361
- Emerging issues on managing information resources p 17 N85-70762
- Information processing resources management [NASA-TM-87466] p 17 N85-72768
- Criteria for analysis of scientific and technical information regulation [PB86-174315] p 104 N86-72104
- NASA scientific and technical information system study p 104 N89-70333
- ### INFORMATION FLOW
- Strategies and mechanisms for the diffusion of scientific and technical information: A comparative study p 92 N84-23406
- Technology transfer [H-REPT-98-15] p 4 N84-25528
- Universal documentation system handbook: an introduction to the universal documentation system [AD-A140140] p 5 N84-25742
- Interactive information environments: A plan for enabling interdisciplinary research [RAND/N-2115] p 6 N84-33284
- The role of information technology in emergency management [GPO-29-457] p 69 N84-34319
- The flow of scientific and technical information in the US Army Research Laboratories [AD-A155050] p 9 N85-33043
- Editors rattle space p 114 N86-10586
- Improving management decision processes through centralized communication linkages p 58 N86-15175
- Computer security policies [GPO-52-154] p 109 N86-15919
- Managing federal information resources. Report under the Paperwork Reduction Act of 1980 [PB86-247682] p 10 N86-25299
- Technology transfer primer [PB86-205341] p 73 N87-12404
- MARC (Machine Readable Catalog) format and life cycle tracking at the National Archives: A study [PB87-126256] p 11 N87-21737
- Space operations: Testing of NASA's technical and management information system [GAO/IMTEC-88-28] p 101 N89-20859
- Information transfer in Soviet science and engineering [RAND-R-2667-ARPA] p 80 N84-74361
- Managing federal information resources: Third annual report under the Paperwork Reduction Act of 1980 [PB84-228641] p 17 N86-71594
- ### INFORMATION MANAGEMENT
- Modeling and analysis of teams of interacting decisionmakers with bounded rationality p 57 A84-21644
- ARIADNE - A knowledge-based interactive system for planning and decision support p 57 A84-33463
- Algorithm 607 - Text exchange system: A transportable system for management and exchange of programs and other text p 18 A84-44325
- The function of report components in the screening and reading of technical reports p 90 A84-45547
- Subjective workload and individual differences in information processing abilities [SAE PAPER 841491] p 47 A86-26011
- FANS - A U.S. perspective p 1 A87-11807
- Computerized numeric databases for materials properties p 63 A87-13182
- Experience, methods and prospects in commercial online materials data distribution p 63 A87-13182
- An architecture for intelligent interfaces: Outline of an approach to supporting operators of complex systems p 48 A87-16618
- Protection of intellectual property in space [AIAA PAPER 86-2779] p 112 A87-18859
- Computer security acquisition management [AIAA PAPER 86-2774] p 106 A87-18863
- Strategy and optimization in human information processing p 48 A87-33502
- The model human processor: An engineering model of human performance p 49 A87-33532
- Computer architecture for a surrogate file to a very large data/knowledge base p 91 A87-34522
- Technical and Management Information System (TMIS) [AIAA PAPER 87-2217] p 34 A87-48600
- Future information technology: The big picture [AAS PAPER 86-111] p 2 A87-53087
- Remote sensing and the First Amendment p 113 A88-19830
- Advanced helicopter cockpit information management p 49 A88-35376
- Information systems for shuttle processing: An enterprise approach p 2 A88-52359
- DOD information analysis centers: Their resources and availability [AIAA PAPER 89-0650] p 91 A89-25619
- Cockpit information management through an intelligent pilot/vehicle interface [AIAA PAPER 89-2096] p 50 A89-49456
- Paperwork Reduction Act amendments of 1983 [H-REPT-96-147] p 3 N84-11989
- Information systems, security and privacy [RAND/P-6930] p 107 N84-21402
- Action Information Management System (AIMS): A user's view p 82 N84-21405
- Automated RTOP management system p 82 N84-21406
- Method for accessing distributed heterogeneous databases p 67 N84-21412
- The database management system: A topic and a tool p 4 N84-22316
- Strategies and mechanisms for the diffusion of scientific and technical information: A comparative study p 92 N84-23406
- Development of a proposed standard for the exchange of scientific microcomputer programs [PB84-157940] p 4 N84-24244
- Technology transfer [H-REPT-98-15] p 4 N84-25528
- Universal documentation system handbook: an introduction to the universal documentation system [AD-A140140] p 5 N84-25742
- Department of Energy's activities to limit distribution of certain unclassified scientific and technical information [PB84-189158] p 109 N84-32302
- The administrative window into the integrated DBMS p 82 N84-33270
- Interactive information environments: A plan for enabling interdisciplinary research [RAND/N-2115] p 6 N84-33284
- User's guide for an IBM PL/I implementation of the international standard organization DIS 8211 information processing-specification for a data descriptive file for information interchange [ORNL/CSD-TM-207] p 8 N84-34188
- Sandia National Laboratories administrative data processing systems [DE84-014328] p 82 N84-34202
- Data dictionary systems and their role in information resource management [AD-A144906] p 6 N85-10859
- A management workstation concept [AD-A145617] p 83 N85-11906
- Five-year plan for meeting the automatic data processing and telecommunications needs of the Federal Government. Volume 1: Planning strategies [PB84-214501] p 21 N85-12777
- Five-year plan for meeting the automatic data processing and telecommunications needs of the Federal Government. Volume 2: Major information technology systems acquisition plans of Federal executive agencies, 1984-1989 [PB84-214519] p 21 N85-12778
- Information processing for better utilization: Assessing the CLER model as organizer for innovation diffusion and planned change information reported in selected studies in the ERIC system p 93 N85-12780
- Corporate use of information regarding natural resources and environmental quality [PB84-222736] p 69 N85-12794
- IRM (Information Resources Management) long-range plan: Fiscal year 1984-1988 (update). Volume 2: ADP and telecommunications acquisition plan [PB84-229244] p 8 N85-12796
- Economic value of consumer information: A selected, annotated bibliography [PB84-235795] p 7 N85-13673
- Executive information system [DE84-015355] p 63 N85-13675
- Document interchange format [PB84-217033] p 7 N85-16517
- White paper on new international satellite systems [PB85-162501] p 8 N85-27127
- Electronic information management and productivity [DE85-013362] p 9 N85-35818
- Records Disposal. A guidebook for laboratory offices [AD-A150064] p 9 N85-35823
- Technical and management information system: The tool for professional productivity on the space station program p 84 N86-15171
- Office automation: The administrative window into the integrated DBMS p 9 N86-15174
- Laboratory technical information system: analysis phase [DE85-018311] p 95 N86-17219
- Bibliographic post-processing with the TIS Intelligent Gateway: Analytical and communication capabilities [DE85-018153] p 95 N86-18245
- Information technologies and social transformation [PB85-240521] p 71 N86-19263
- Automated Information Management Technology (AIM-TECH). Considerations for a technology investment strategy [AD-A181139] p 38 N86-20173
- The geonames processing system functional design specification: Volume 4: Advanced symbol processing [AD-A181874] p 71 N86-24226
- Air Force Geophysics Laboratory management information system study [AD-A181910] p 85 N86-24561
- Keeping the nation's secrets: A report to the Secretary of Defense by the Commission to Review DoD Security Policies and Practices [AD-A181998] p 110 N86-24562
- Managing federal information resources. Report under the Paperwork Reduction Act of 1980 [PB86-247682] p 10 N86-25299
- Telecommunications alternatives for federal users. Market trends and decisionmaking criteria [PB86-153764] p 23 N86-25687
- Data Base Management. Proceedings of a conference [AD-A158285] p 85 N86-25999
- Carbon Dioxide Information Center FY 1985 [DE86-004654] p 72 N86-26245
- Public laws of the 96th Congress relating to information policy [CRS-TK-7865-F] p 114 N86-27130
- How Ebenezer Scrooge and Peter Drucker are helping shape DoD's Scientific and Technical Information Program [AD-A165643] p 96 N86-26779
- A structural optimization method for information resource management [AD-A166420] p 59 N86-29722

Analysis of the use of Defense Technical Information Center resources by research and development centers and laboratories in the US Army p 97 N86-33203
 [AD-A168441]
 Microcomputer-based local automation model System planning guidance p 98 N87-11630
 [AD-A168136]
 Technology transfer primer p 73 N87-12404
 [PB86-205341]
 Using bar code technology to enhance classified document accountability p 98 N87-21739
 [DE87-000760]
 DOD (Department of Defense) Procedures for Management of Information Requirements p 12 N87-24227
 [PB87-155495]
 Managing federal information resources. Report under the Paperwork Reduction Act of 1980 p 12 N87-25878
 [PB87-114138]
 Benefits of scientific and technical information services for aerospace and defense p 98 N87-26677
 Strategic planning process at the National Technical Information Service p 12 N87-26680
 Bibliography on information resources management [PB87-185997] p 12 N87-26458
 Implementing and managing change. A guide for assessing information technology p 12 N87-11571
 [DE88-000035]
 Electronic Records Administration at the Savannah River Plant p 12 N88-12415
 [DE87-014842]
 Information analysis centers in the department of defense, revision p 98 N88-12420
 [AD-A184002]
 Foundation. Transforming data bases into knowledge bases p 39 N88-16423
 The intelligent user interface for NASA's advanced information management systems p 39 N88-18424
 Laboratory Information Management System (LIMS): A case study p 26 N88-21697
 [NASA-TM-100835]
 Information retrieval systems evolve—advances for easier and more successful use p 100 N88-30482
 Evaluating the effectiveness of information use p 14 N89-11626
 Evaluating the performance of information centre staff p 14 N89-11629
 Evaluating performance of information centre operations and services p 14 N89-11630
 A framework for evaluating the effectiveness of information centres and services p 14 N89-11631
 Evaluating for information center planning p 15 N89-11632
 Federal information resources management. Bridging vision and action p 15 N89-12488
 Information resource management: An architectural concept/experience p 86 N89-14177
 [DE88-015184]
 Proceedings of the Workshop on AI (Artificial Intelligence), and Distributed Problem Solving [PB88-224852] p 44 N89-16400
 Information management expert systems p 87 N89-16407
 Life cycle management handbook p 15 N89-17545
 [DE89-004315]
 Space operations. Testing of NASA's technical and management information system p 101 N89-20859
 [GAO/IMTEC-88-28]
 Automated library systems and document tracking systems: Commercial software alternatives, volume 1 [DE89-007718] p 102 N89-21706
 Menuing and scrolling as alternative information management techniques p 88 N89-22524
 [AD-A203029]
 Bibliographic coupling among scientific papers in biological research specialties p 103 N89-25771
 A rapid prototyping/artificial intelligence approach to space station-era information management and access p 48 N89-26600
 Natural language processing and advanced information management p 28 N89-26602
 Electronic information delivery at the job site [DE89-009726] p 17 N89-27350
 Management Information Database System [DE89-014595] p 89 N89-27597
 Information transfer in Soviet science and engineering [RAND-R-2667-ARPA] p 80 N84-74361
 Information Management in the Department of Defense The role of libraries p 80 N85-70560
 [AD-A130345]
 Emerging issues on managing information resources p 17 N85-70762
 US Coast Guard Information Center plan [PB85-175644] p 17 N85-74028
 Telecommunications security and privacy p 111 N85-74342

Managing federal information resources. Third annual report under the Paperwork Reduction Act of 1980 [PB84-228641] p 17 N86-71594
 Centers for analysis of scientific and technical information: regulation p 104 N86-72104
 [PB86-174315]
 Guidelines for metric transition of software [PB86-240215] p 17 N87-70232
 Proceedings of the 14th Annual Conference of the Department of Energy/Contractors Micrographics and Information Management Association [DE88-000230] p 104 N88-70731
 Using bar code technology to enhance classified document accountability p 112 N88-70733
 Computer aided retrieval of vital records p 80 N88-70735
 Problems of storing nonlinear documentation p 80 N88-70736
 User's guide for the training database system, version 2.1 [DE88-016653] p 80 N89-70023
 Algorithm for supporting views in the microcomputer environment [PB88-174155] p 32 N89-71248
 I/O buffer performance in a virtual memory system [NASA-CR-185730] p 32 N89-71335
INFORMATION PROCESSING (BIOLOGY)
 Subjective workload and individual differences in information processing abilities p 47 A86-26011
 [SAE PAPER 841491]
 Strategy and optimization in human information processing p 48 A87-33502
 A personalized and prescriptive decision aid for choice from a database of options [AD-A188725] p 59 N88-20820
INFORMATION RETRIEVAL
 Information retrieval strategies in a file-search environment p 90 A84-44092
 Cost considerations in database selection - A comparison of DIALOG and ESA/IRS p 90 A84-45571
 Idiot sheets - Preparing and using Database guide sheets p 90 A85-24514
 'Meatball searching' - The adversarial approach to online information retrieval p 90 A86-40659
 A knowledge based system approach to document retrieval p 32 A87-16706
 Gathering news from space p 113 A88-19831
 The effects of different data base formats on information retrieval p 58 A88-35463
 Satellite data management for effective data access p 64 A88-38690
 Living in the past - Knowledge capture of evolving space systems p 34 A89-25165
 [AIAA PAPER 89-0190]
 How an engineer acquires and uses information through the DIALOG system p 91 A89-25620
 [AIAA PAPER 89-0851]
 Artificial intelligence implications for information retrieval p 35 N84-11821
 [AD-A131382]
 Computer-Output Microfiche (COM) on the Oak Ridge computer network p 92 N84-15835
 [DE84-002422]
 An interactive soils information system Users manual [AD-A133480] p 66 N84-16078
 Services for the analysis and evaluation of information [PB84-104504] p 51 N84-18113
 Functional and database architecture design [AD-A136275] p 3 N84-19169
 The automated information retrieval system in the field of science and science Policy-AWION [AD-A135565] p 66 N84-19174
 Guide to the development of a human factors engineering data retrieval system [AD-A136918] p 51 N84-20187
 Managing geometric information with a data base management system p 67 N84-22211
 Information theoretic models of memory in human decisionmaking models [AD-P002883] p 51 N84-22844
 Project FIRST (Faculty Information and Research Service for Texas) technical description of project and results [PB84-161629] p 67 N84-24501
 Display units for online passage retrieval: A comparative analysis [DE84-001004] p 92 N84-25369
 Information search in judgment tasks The effects of unequal cue validity and cost [AD-A141712] p 5 N84-29437
 Inductive information retrieval using parallel distributed computation [AD-A142712] p 36 N84-31050
 The user's mental model of an information retrieval system Effects on performance p 51 N84-32275

Page indexing for textual information retrieval systems p 93 N84-32277
 An evaluation of two reliability and maintainability information systems p 58 N84-33290
 [AD-A143438]
 Intelligent information retrieval from on-line technical documentation p 37 N85-11626
 [AD-P003946]
 Information processing for better utilization: Assessing the CLER model as organizer for innovation diffusion and planned change information reported in selected studies in the ERIC system p 93 N85-12780
 Guide to human factors information sources [AD-A149102] p 52 N85-19849
 Post-processing of bibliographic citations from DOE/Recon, NASA/Recon, and DOD/DROLS [DE85-000617] p 93 N85-20938
 Evaluation of the vocabulary switching systems [PB85-127157] p 93 N85-22260
 General design considerations of an Air Force information system p 7 N85-23449
 [AD-A150811]
 Evaluating the appropriateness of microcomputers for litigation document management using the analytic hierarchy process p 69 N85-24788
 The retrieval expert model of information retrieval p 37 N85-25003
 Retrieval performance in a full text journal article database p 94 N85-27747
 Access path optimization for network database retrieval p 94 N85-27749
 Design of an interface to an information retrieval network p 94 N85-27750
 Avionics Data Base users manual [AD-A153810] p 69 N85-28942
 National Archives and Records Service (NARS) twenty year preservation plan [PB85-177640] p 84 N85-29854
 SAFORD: Safety of explosive ordnance databank [AD-A154058] p 70 N85-30972
 A user's guide for the BIBSORT program for the IBM-PC personal computer p 94 N86-12995
 [AD-A157836]
 Integrated bibliographic information system: Integrating resources by integrating information technologies [AD-A157700] p 95 N86-15211
 Examining learning theory of online information retrieval systems and applications in computer-aided instruction Implications for the Defense Technical Information Center's computer-aided instruction [AD-A159001] p 38 N86-15213
 Assurance Program for Remedial Action (APRA) microcomputer-operated bibliography management system p 95 N86-16155
 [DE85-008783]
 Logical and physical database design with a full-text environment p 23 N86-16159
 [DE85-015683]
 Laboratory technical information system analysis phase [DE85-018311] p 95 N86-17219
 Bibliographic post-processing with the TIS Intelligent Gateway: Analytical and communication capabilities [DE85-018153] p 95 N86-18245
 Beyond associations: Strategic components in memory retrieval [AD-A160783] p 52 N86-18985
 The integrated bibliographic information system Resource sharing tailored for local needs [AD-A161700] p 95 N86-21431
 A design methodology for on-line menu-driven information retrieval systems p 96 N86-24558
 Keeping the nation's secrets A report to the Secretary of Defense by the Commission to Renew DoD Security Policies and Practices [AD-A161998] p 110 N86-24562
 Keeping track of archived drawings A case study [DE86-003129] p 71 N86-24572
 Description of a tentative US-USSR common communication format [DE86-004676] p 96 N86-25681
 On-line interactive database for the storage and rapid information retrieval of gas industry data [TI86-900895] p 96 N86-28792
 University participation via UNIDATA, part 1 p 72 N86-29295
 University participation via UNIDATA, part 2 p 72 N86-29296
 Network access to PCDS (SPAN, ESN, SESNET, ARPANET) p 24 N86-29297
 Methods of downloading to user institutions p 24 N86-29296
 The DoD gateway information system Prototype experience [AD-A166200] p 97 N86-30570

- Integrated library system at ORNL: LION
[DE86-00867] p 97 N86-31448
- Analysis of the use of Defense Technical Information Center resources by research and development centers and laboratories in the US Army
[AD-A168441] p 97 N86-33203
- Freedom of Information Act Noncompliance with affirmative disclosure provisions
[AD-A168589] p 10 N86-33204
- Distributed knowledge base systems for diagnosis and information retrieval
[AD-A170830] p 38 N87-15025
- A study of organizational information search, acquisition, storage and retrieval
[AD-A172063] p 98 N87-16650
- Proceedings of the 2nd Conference on Computer Interfaces and Intermediaries for Information Retrieval
[AD-A174000] p 53 N87-16657
- The DOD gateway information system directory of resources
[AD-A174154] p 25 N87-16658
- MARC (Machine Readable Catalog) format and life cycle tracking at the National Archives: A study
[PB87-126256] p 11 N87-21737
- Experiments on the cognitive aspects of information seeking and information retrieving
[PB87-157899] p 38 N87-24238
- Optical laser technology, specifically CD-ROM (Compact Disc - Read Only Memory) and its application to the storage and retrieval of information
[AD-A184111] p 74 N88-12086
- Electronic Records Administration at the Savannah River Plant
[DE87-014842] p 12 N88-12415
- Towards automated consulting. Design feedback from the performance of online documentation
[DE87-012243] p 99 N88-13082
- Subjective probability, combination of expert opinion and probabilistic approaches to information retrieval
p 74 N88-13085
- Problem solving as intelligent retrieval from distributed knowledge sources
p 39 N88-16392
- A hypertext writing environment and its cognitive basis
[AD-A188179] p 54 N88-18298
- Knowledge retrieval as specialized inference
[AD-A189042] p 39 N88-20899
- The Scientific and Technical Information Network (STINET). Foundation for evolution
[AD-A189750] p 99 N88-22822
- The Engineer Studies Center guide to research and data collection
[AD-A189971] p 13 N88-23680
- Translations of scientific and technical literature: A guide to their location
p 99 N88-23686
- Computer-aided research
[DE88-007771] p 54 N88-26114
- Capitalizing on experience with intelligence gateway software
[AD-A193362] p 99 N88-27971
- Walter user's manual (Version 1.0)
[AD-A192542] p 55 N88-28644
- Information retrieval systems evolve—advances for easier and more successful use
p 100 N88-30462
- USL/DBMS NASA/RECON working paper series Standards
[NASA-CR-184508] p 87 N89-14948
- Overview of the NASA/RECON educational, research, and development activities of the Computer Science Departments of the University of Southwestern Louisiana and Southern University
[NASA-CR-184509] p 100 N89-14949
- An innovative, multidisciplinary educational program in interactive information storage and retrieval. Presentation visuals
[NASA-CR-184521] p 100 N89-14961
- The design of PC/MISL, a PC-based common user interface to remote information storage and retrieval systems. Presentation visuals
[NASA-CR-184524] p 55 N89-14964
- Natural language query system design for interactive information storage and retrieval systems. Presentation visuals
[NASA-CR-184526] p 87 N89-14966
- KARL: A Knowledge-Assisted Retrieval Language
[NASA-CR-184529] p 43 N89-14969
- An overview of the USL/DBMS NASA/PC R and D project working paper series
[NASA-CR-184533] p 15 N89-14973
- General specifications for the development of a USL NASA PC R and D statistical analysis support package
[NASA-CR-184537] p 15 N89-14977
- General specifications for the development of a USL/DBMS NASA/PC R and D distributed workstation
[NASA-CR-184538] p 15 N89-14978
- A database management capability for Ada
p 77 N89-16371
- Computer technologies and institutional memory
p 55 N89-20062
- Integrating syntax, semantics, and discourse DARPA (Defense Advanced Research Projects Agency) natural language understanding program
[AD-A203747] p 101 N89-20677
- Using English for indexing and retrieving
[AD A202227] p 101 N89-20866
- Automated library systems and document tracking systems. Commercial software alternatives, volume 1
[DE89-007716] p 102 N89-21706
- Core knowledge system Storage and retrieval of inconsistent information
p 45 N89-23132
- Fostering interaction of government, defense, and aerospace databases
p 103 N89-23374
- The utilization of neural nets in populating an object-oriented database
p 45 N89-26599
- A rapid prototyping/artificial intelligence approach to space station-era information management and access
p 46 N89-26890
- An intelligent user interface for browsing satellite data catalogs
p 79 N89-26601
- A multimedia database management system supporting contents search in media data
[AD-A207070] p 103 N89-26780
- Problems and solutions in online documentation systems
[DE89-014082] p 80 N89-28447
- Proceedings of the 14th Annual Conference of the Department of Energy/Contractors Micrographics and Information Management Association
[DE88-000230] p 104 N88-70731
- Computer aided retrieval of vital records
p 80 N88-70735
- NASA scientific and technical information system study
p 104 N89-70333
- ### INFORMATION SYSTEMS
- An intermediary's perspective of online databases for local governments
p 90 A85-24549
- A systems approach to ATE documentation
p 62 A85-26824
- Pilots wary of tactical information systems
p 62 A85-41058
- Security implications of the Space Station information system
p 104 A85-42593
- The pilot climate data system
p 63 A86-20669
- EASCON '84, Proceedings of the Seventeenth Annual Electronics and Aerospace Conference, Washington, DC, September 10-12, 1984
p 1 A86-21876
- GPS/JTIDS compatibility — Global Positioning System/Joint Tactical Information Distribution System
p 63 A87-13537
- Good security practices for I/S networks
[AIAA PAPER 86-2775] p 106 A87-18858
- Strawman Definition for the Space Station Information System Network Security
[AIAA PAPER 86-2780] p 36 A87-18860
- Issues and themes in information science and technology
[AIAA PAPER 87-1661] p 1 A87-31113
- NASA space information systems overview
[AIAA PAPER 87-2189] p 63 A87-48577
- Scientific customer needs - NASA user
[AIAA PAPER 87-2196] p 49 A87-48582
- Data management standards for space information systems
[AIAA PAPER 87-2205] p 2 A87-48590
- Technical and Management Information System (TMIS)
[AIAA PAPER 87-2217] p 64 A87-48600
- Space Station Information System integrated communications concept
[AIAA PAPER 87-2228] p 18 A87-48606
- Space Station Information System requirements for integrated communications
[AIAA PAPER 87-2229] p 18 A87-48607
- A systems-approach to the design of the Eos data and information system
p 64 A87-53207
- Space Station Information System - Concepts and international issues
[IAF PAPER 87-76] p 64 A88-15851
- A proposed Applications Information System - Concept, implementation, and growth
[IAF PAPER 87-156] p 64 A88-15906
- The investigative techniques used by the Challenger Commission to address information system failures as they related to the Space Shuttle accident
p 58 A88-46509
- Satellite information systems — Book
p 19 A88-55015
- Space Station Information Systems
[IAF PAPER 88-059] p 80 A88-55330
- The second generation intelligent user interface for the crustal dynamics data information system — for NASA space missions
p 34 A89-21810
- Technology advances for information access - Prospects and impact
[AIAA PAPER 89-0849] p 91 A89-25618
- How an engineer acquires and uses information through the DIALOG system
[AIAA PAPER 89-0851] p 91 A89-25620
- A multi-spectral analysis system using large databases — from satellite and ground-based observations
p 58 A89-27177
- The EOS data and information system - Concepts for design
p 65 A89-31939
- Toward a complete EOS data and information system
p 66 A89-31941
- Searching the PASCAL database - A user's perspective
p 92 A86-45650
- Building maintainable large scale software systems - The measurable benefits of CASE technology
[AIAA PAPER 89-5051] p 20 A89-48162
- The use and value of Defense Technical Information Center products and services
[AD-A130805] p 92 N84-11061
- TIS: An intelligent gateway computer for information and modeling networks. Overview
[DE83-017986] p 20 N84-14067
- An interactive soils information system. Users manual
[AD-A133480] p 66 N84-16078
- Scientific and technical information system for the Washington State Legislature
[PB84-100650] p 66 N84-18112
- Services for the analysis and evaluation of information
[PB84-104504] p 51 N84-18113
- Functional and database architecture design
[AD-A136275] p 3 N84-19169
- The automated information retrieval system in the field of science and science Policy-AWION
[AD-A135565] p 66 N84-19174
- Guide to the development of a human factors engineering data retrieval system
[AD-A136918] p 51 N84-20187
- Videodisc Premastering facility: Technical evaluation
[PB84-135821] p 20 N84-20840
- Open systems interconnection for the defence community
p 20 N84-21426
- Optical information Processing for Aerospace Applications 2
[NASA-CP-2302] p 67 N84-22402
- The microcomputer in the acquisition environment
[AD-P002748] p 67 N84-23295
- Project FIRST (Faculty Information and Research Service for Texas) technical description of project and results
[PB84-161629] p 67 N84-24501
- The Pilot Land Data System: Report of the Program Planning Workshops
[NASA-TM-86250] p 67 N84-26468
- Report on US domestic and international telecommunications and information markets
[PB84-166362] p 21 N84-27602
- Local automation model: System specification
[AD-A141503] p 92 N84-29798
- Guidelines for contingency planning NASA (National Aeronautics and Space Administration): ADP security risk reduction decision studies
[PB84-189836] p 108 N84-30737
- Page indexing for textual information retrieval systems
p 93 N84-32277
- Design, test, and evaluation of an Air Force environmental model and data exchange
[AD-A143226] p 68 N84-33060
- IBM's token-ring LAN (Local-Area Network): A base-level communications solution
[AD-A143446] p 21 N84-33063
- An online directory of databases for material properties
[DE84-013210] p 68 N84-33099
- Implementing automated information systems in the Air Force
[AD-A143398] p 6 N84-33288
- Solar-terrestrial data access distribution and archiving
[NASA-CR-173906] p 68 N84-33295
- The role of information technology in emergency management
[GPO-29-457] p 69 N84-34319
- DTIC 2000: A corporate plan for the future
[AD-A143900] p 6 N84-34327
- Implications of artificial intelligence for a user defined technical information system
[AD-P003938] p 37 N85-11618
- Memory-based expert systems
[AD-A145612] p 37 N85-11628
- Five-year plan for meeting the automatic data processing and telecommunications needs of the Federal Government. Volume 1: Planning strategies
[PB84-214501] p 21 N85-12777

Five-year plan for meeting the automatic data processing and telecommunications needs of the Federal Government. Volume 2 Major information technology systems acquisition plans of Federal executive agencies, 1984-1989
[PB84-214519] p 21 N85-12778

Information processing for better utilization Assessing the CLER model as organizer for innovation diffusion and planned change information reported in selected studies in the ERIC system p 93 N85-12780

Preserving the time dimension in information systems p 37 N85-12784

Design of a scientific information collaboration and dissemination system, volumes 1 thru 3
[AD-A148002] p 69 N85-12791

IRM (Information Resources Management) long-range plan: Fiscal year 1984-1988 (update) Volume 2 ADP and telecommunications acquisition plan
[PB84-229244] p 6 N85-12796

Evaluation of the National Library of Medicine's programs in the medical behavior sciences: Online searchers' reactions to database and vendor capabilities in the Medical Behavioral Sciences (MBS), study 4
[PB84-230523] p 93 N85-12798

Competitive assessment of the US information services industry
[PB84-174804] p 7 N85-12803

INFORM system 2-year plan, FY 1984-1985
[DE84-016044] p 7 N85-13674

Archiving and exchange of a computerized marine seismic database The ROSE data archive system
[DE84-901453] p 69 N85-13677

Recommended documentation for computer users at ANL
[DE84-016285] p 7 N85-15434

Guide to human factors information sources
[AD-A149102] p 52 N85-19649

Intel IDIS evaluation
[DE85-003748] p 83 N85-23451

Information information networks for material properties. Revision 1
[DE85-007412] p 22 N85-27572

Compilation of abstracts of theses submitted by candidates for degrees
[AD-A151722] p 83 N85-27739

Efforts at office automation and information systems utilization at Martin Marietta Energy Systems, Incorporated
[DE85-006154] p 8 N85-28633

Avionics Data Base users manual
[AD-A153810] p 69 N85-28942

The international scope of data evaluation
[DE85-005953] p 8 N85-30760

SAFEORD: Safety of explosive ordnance databank
[AD-A154058] p 70 N85-30972

Evaluative report on the Institute for Computer Sciences and Technology, National Bureau of Standards, fiscal year 1984
[PB85-176097] p 8 N85-31848

Navy information systems Planning, policy, organization, and management
[PB85-176113] p 8 N85-32038

The flow of scientific and technical information in the US Army Research Laboratories
[AD-A155050] p 9 N85-33043

Electronic information management and productivity
[DE85-013362] p 9 N85-35818

Annotated bibliography of publications dealing with occupational health and medical information systems, cost analysis procedures, evaluation methodology and related legal issues
[AD-A156650] p 94 N86-11078

Improving management decision processes through centralized communication linkages p 58 N86-15175

Integrated bibliographic information system. Integrating resources by integrating information technologies
[AD-A157700] p 95 N86-15211

Implementation of multifunction information systems at three Navy facilities
[AD-A157797] p 84 N86-16153

Laboratory technical information system analysis phase
[DE85-018311] p 95 N86-17219

Information Systems development aids
[DE85-018161] p 10 N86-18248

Microcomputer-based local automation model Functional description
[AD-A160610] p 95 N86-19002

Information technologies and social transformation
[PB85-240521] p 71 N86-19263

A process activity monitor for AOS/VS
[NASA-TM-86535] p 10 N86-19950

Information technology R and D Critical trends and issues
[PB85-245660] p 10 N86-19960

Space Station data system analysis/architecture study Task 1 Functional requirements definition, DR-5
[NASA-CR-177838] p 23 N86-20473

The integrated bibliographic information system Resource sharing tailored for local needs
[AD-A161700] p 95 N86-21431

Air Force Geophysics Laboratory management information system study
[AD-A161910] p 85 N86-24561

Managing federal information resources Report under the Paperwork Reduction Act of 1980
[PB86-247682] p 10 N86-25299

Schema-based theory of information presentation for distributed decision making
[AD-A163150] p 58 N86-25992

Carbon Dioxide Information Center FY 1985
[DE86-004654] p 72 N86-26245

Public laws of the 98th Congress relating to information policy
[CRS-TL-7885-F] p 114 N86-27130

On-line interactive database for the storage and rapid information retrieval of gas industry data
[TI86-900695] p 96 N86-28792

Information services Pros and cons
p 97 N86-28797

The costs of not having refined information
p 59 N86-28798

Measuring the value of information and information systems, services and products p 97 N86-28799

University participation via UNIDATA, part 1
p 72 N86-29295

Network access to PCDS (SPAN, ESN, SESNET, ARPANET)
p 24 N86-29297

A structural optimization method for information resource management
[AD-A166420] p 59 N86-29722

The DoD gateway information system Prototype experience
[AD-A166200] p 97 N86-30570

Remote Sensing Information Sciences Research Group Santa Barbara Information Sciences Research Group, year 3
[NASA-CR-179769] p 72 N86-32863

Organization as information processing systems Toward a model of the research factors associated with significant research outcomes
[AD-A168018] p 10 N86-33200

Organizations as information processing systems. Environmental characteristics, company performance and chief executive scanning, an empirical study
[AD-A168035] p 10 N86-33201

Analysis of the use of Defense Technical Information Center resources by research and development centers and laboratories in the US Army
[AD-A168441] p 97 N86-33203

Information technology resources long-range plan, FY 1987-FY 1991
[DE86-010457] p 11 N86-33206

State of the art of geoscience libraries and information services
[DE86-011188] p 97 N86-33207

Prototype material properties data network
[NASA-TM-89243] p 24 N86-33208

A user's guide to the socioeconomic environmental demographic information system (SEEDIS)
[AD-A168917] p 73 N87-12388

Federal government information technology Management, security and congressional oversight
[PB86-205499] p 110 N87-12397

Federal information systems management. Problems, solutions and more problems
[AD-A171366] p 11 N87-13353

Earth and environmental science in the 1980's. Part 1 Environmental data systems, supercomputer facilities and networks
[NASA-CR-4029] p 24 N87-16381

The DOD gateway information system directory of resources
[AD-A174154] p 25 N87-16658

Acquisition, use and archiving of real-time data
[DE86-014769] p 25 N87-18282

Development of a micrometeorological and tracer data archive
[PB87-110490] p 73 N87-19845

Optimal combination of information from multiple sources, part 3
[AD-A174726] p 59 N87-19913

MARC (Machine Readable Catalog) format and life cycle tracking at the National Archives. A study
[PB87-126256] p 11 N87-21737

NASA Information Sciences and Human Factors Program
[NASA-TM-87569] p 53 N87-22410

Space operations NASA's use of information technology Report to the Chairman, Committee on Science, Space and Technology
[GAO/IMTEC-87-20] p 11 N87-22551

Quick-look guide to the crustal dynamics project's data information system
[NASA-TM-87818] p 73 N87-23018

The evaluation and extension of TAE in the development of a user interface management system
p 53 N87-23158

Materials Information for Science and Technology (MIST) Project overview Phase 1 and 2 and general considerations
[DE87-006799] p 73 N87-23312

Livermore risk analysis methodology A quantitative approach to management of the risk associated with the operation of information systems
[DE87-006828] p 110 N87-24232

Benefits of scientific and technical information services for aerospace and defense p 98 N87-26677

Strategic planning process at the National Technical Information Service p 12 N87-26680

Artificial intelligence developments re DOD Gateway Information System (DGIS) and Defense Applied Information Technology Center (DAITC)
[AD-A181101] p 111 N87-27550

DTIC (Defense Technical Information Center) model action plan for incorporating DGIS (DOD Gateway Information System) capabilities
[AD-A181102] p 98 N87-27551

Information network for numeric databases of materials properties
[DE87-010512] p 74 N87-28460

Research and development of models and instruments to define, measure, and improve shared information processing within government oversight agencies
[DE87-012473] p 12 N87-29371

Data integration for a scientific field experiment
[DE87-011302] p 74 N87-30211

Design and development of a database for spectral data and analysis results
[DE87-011323] p 74 N87-31564

Implementing and managing change A guide for assessing information technology
[DE86-000035] p 12 N88-11571

Lewis Information Network (LINK) Background and overview
[NASA-TM-100182] p 25 N88-11925

Advanced Information Processing System (AIPS) proof-of-concept system functional requirements I/O network system services
[NASA-CR-181481] p 12 N88-12412

The impact of information technology on research in science and engineering
[DE88-000342] p 13 N88-12417

Information analysis centers in the department of defense, revision
[AD-A184002] p 98 N88-12420

Advanced techniques for the storage and use of very large, heterogeneous spatial databases The representation of geographic knowledge: Toward a universal framework -- relations (mathematics)
[NASA-CR-161517] p 39 N88-12421

DoD Gateway Information System (DGIS) common command language The first prototyping and the decision for artificial intelligence
[AD-A185950] p 39 N88-15725

Problem solving as intelligent retrieval from distributed knowledge sources p 39 N88-16392

The intelligent user interface for NASA's advanced information management systems p 39 N88-16424

DOD Gateway Information System (DGIS) common command language: Prolog knowledge base profile Common command language report no 3
[AD-A186150] p 99 N88-16574

Critical issues in NASA information systems
[NASA-CR-182380] p 13 N88-16577

IMIS. Integrated Maintenance Information System. A maintenance information delivery concept
p 85 N88-17207

Management of complex information in support of evolving autonomous expert systems
[AD-A186680] p 39 N88-17337

Methods of eliciting information from experts
[AD-A187468] p 54 N88-18189

Air Force geographic information and analysis system
[DE88-001420] p 74 N88-18505

Guidelines for exchanging computerized information
[DE88-004736] p 13 N88-18710

KREME (Knowledge Representation, Editing and Modeling Environment) A user's introduction, phase 1
[AD-A188906] p 39 N88-20052

Defending secrets, sharing data. New locks and keys for electronic information
[PB88-143185] p 111 N88-20210

Towards a tribology information system: The results of a Planning Workshop held at the National Bureau of Standards, July-August 1985
[PB86-18804] p 28 N86-21448

The Scientific and Technical Information Network (STINET). Foundation for evolution
[AD-A186750] p 99 N86-22622

Information and stochastic systems
[AD-A186187] p 26 N86-24836

The role of working memory in language comprehension
[AD-A186721] p 54 N86-26805

Computer-aided writing
[AD-A182516] p 54 N86-26837

Capitalizing on experience with intelligence gateway software
[AD-A183382] p 99 N86-27971

Walter user's manual (Version 1.0)
[AD-A182542] p 55 N86-28644

A comparison of typical meteorological year solar radiation information with the SOLMET data base
[DE86-008242] p 75 N86-28247

A shared-world conceptual model for integrating space station life sciences telepresence operations
p 55 N86-30333

The second generation intelligent user interface for the crustal dynamics data information system
p 40 N86-30352

Knowledge-based integrated information systems engineering: Highlights and bibliography. Knowledge-Based Integrated Information Systems Engineering (KBIISE) Project, volume 1
[AD-A185850] p 40 N86-30449

Technical opinions regarding knowledge-based integrated information systems engineering, volume 6
[AD-A185857] p 40 N86-30454

Knowledge-Based Integrated Information Systems Development Methodologies Plan. Knowledge-Based Integrated Information Systems Engineering (KBIISE) report, volume 2
[AD-A185851] p 41 N86-30455

Strategic, organizational and standardization aspects of integrated information systems, volume 6
[AD-A185855] p 14 N86-30457

The Remote Atmospheric Probing Information Display (RAPID) system
[AD-A186314] p 75 N86-10500

Integrating distributed homogeneous and heterogeneous databases. Prototype, volume 3
[AD-A186852] p 27 N86-10686

Standards conformance testing
[PB86-215445] p 14 N86-11412

Decision-oriented strategic planning for information systems: Applying conceptual models of crisis decision-making to strategic planning for crisis management decision support systems
p 15 N86-12486

Information resource management: An architectural concept/experience
[DE86-015184] p 86 N86-14177

PROMIS (Procurement Management Information System)
[NASA-CR-179395] p 87 N86-14933

Interactive access to scientific and technological factual databases worldwide
[DE86-018172] p 100 N86-14943

USL/DBMS NASA/RECON working paper series. Standards
[NASA-CR-184508] p 87 N86-14948

Overview of the NASA/RECON educational, research, and development activities of the Computer Science Departments of the University of Southwestern Louisiana and Southern University
[NASA-CR-184509] p 100 N86-14949

Concepts and implementations of natural language query systems
[NASA-CR-184514] p 60 N86-14954

Knowledge based systems. A critical survey of major concepts, issues and techniques. Volumes
[NASA-CR-184518] p 43 N86-14958

An innovative, multidisciplinary educational program in interactive information storage and retrieval. Presentation visuals
[NASA-CR-184521] p 100 N86-14961

The design of PC/MISL, a PC-based common user interface to remote information storage and retrieval systems
[NASA-CR-184523] p 55 N86-14963

The design of PC/MISL, a PC-based common user interface to remote information storage and retrieval systems. Presentation visuals
[NASA-CR-184524] p 55 N86-14964

Natural language query system design for interactive information storage and retrieval systems. Presentation visuals
[NASA-CR-184526] p 87 N86-14966

An overview of the USL/DBMS NASA/PC R and D project working paper series
[NASA-CR-184533] p 15 N86-14973

Users manual for the Research Notes System (Version 1.5)
[DE86-001391] p 87 N86-15787

Life cycle management handbook
[DE86-004315] p 15 N86-17545

Information systems for the Space Station ERA
p 101 N86-18758

Electronic data generation and display system
p 61 N86-19891

Status of DOE information network modifications
[DE86-005191] p 101 N86-23028

The DoD Gateway Information System (DGIS): The development toward artificial intelligence and hypermedia in common command language
[AD-A203674] p 102 N86-20689

Automated library systems and document tracking systems: Commercial software alternatives, volume 1
[DE86-007718] p 102 N86-21706

Development of a dBase III plus database for office automation within the Department of Logistics Management, School of Systems and Logistics
[AD-A202628] p 16 N86-22354

Information technology resources long-range plan: FY90 to FY94
[DE86-007784] p 16 N86-22527

Performance issues in management of the Space Station Information System
[NAF/A-CR-185408] p 86 N86-25773

An expert system to facilitate selecting a database management system
[DE86-012350] p 45 N86-25774

Data base development and research and editorial support
[NASA-CR-183249] p 89 N86-26440

National STI (Scientific and Technical Information) system of Egypt: Implementation
[PB84-181777] p 104 N84-74126

Information processing resources management
[NASA-TM-87468] p 17 N85-72788

U.S. Coast Guard Information Center plan
[PB85-175644] p 17 N85-74028

Guidelines for numeric translation of software
[PB86-240215] p 17 N87-70232

User's guide for the ENGNOTE database system for LBL engineering notes, version 1.2
[DE86-018652] p 80 N86-70024

NASA scientific and technical information system study
p 104 N86-70333

INFORMATION THEORY

Information theoretic models of memory in human decision-making models
[AD-P002863] p 51 N84-22844

Strategies and mechanisms for the diffusion of scientific and technical information. A comparative study
p 92 N84-23408

Policy implications of information technology
[PB84-183219] p 5 N84-31060

Information information networks for material properties. Revision 1
[DE85-007412] p 22 N85-27572

Future information technology, 1984
Telecommunications
[NBS/SP-500/119] p 22 N85-27762

Information technologies and social transformation
[PB85-240521] p 71 N86-19263

Information acquisition for model construction. An integrative, decision-theoretic perspective
p 61 N86-21705

INFORMATION TRANSFER

Algorithm 607 - Text exchange system. A transportable system for management and exchange of programs and other text
p 16 A84-44325

DOO information analysis centers - Their resources and availability
[AIAA PAPER 89-0850] p 91 A89-25619

The flow of scientific and technical information in the US Army Research Laboratories
[AD-A155050] p 9 N85-33043

Integrated bibliographic information system. Integrating resources by integrating information technologies
[AD-A157700] p 95 N86-15211

Public laws of the 98th Congress relating to information policy
[CRS-TK-7865-F] p 114 N86-27130

The costs of not having refined information
p 59 N86-28798

Documentation of materials data for computer storage and retrieval
[DE86-009509] p 72 N87-11493

MARC (Machine Readable Catalog) format and life cycle tracking at the National Archives. A study
[PB87-126256] p 11 N87-21737

Information retrieval systems evolve-advances for easier and more successful use
p 100 N86-30462

Technology transfer report
[DE86-008044] p 103 N86-23381

INPUT/OUTPUT ROUTINES

Advanced Information Processing System (AIPS) proof-of-concept system functional requirements I/O network system services
[NASA-CR-181481] p 12 N86-12412

The use of portable microcomputer as a data collection tool to support integrated simulation support environments: A concept
[AD-A186414] p 14 N86-11403

I/O buffer performance in a virtual memory system
[NASA-CR-185730] p 32 N86-71335

Performance of a data base management system with partially locked virtual buffers
[NASA-CR-185729] p 90 N86-71336

INSTRUCTION SETS (COMPUTERS)

Idiot sheets - Programming and using Database guide sheets
p 80 A85-24514

INTEGRATED CIRCUITS

Computer-aided fabrication system implementation
[AD-A203861] p 86 N86-21576

INTEGRATED ENERGY SYSTEMS

A user's guide to the socioeconomic environmental demographic information system (SEEDIS)
[AD-A186917] p 73 N87-12386

INTEGRATED LIBRARY SYSTEMS

Bibliographic networks and microcomputer applications for aerospace and defense scientific and technical information
p 98 N87-19923

INTELLIGENCE

Design and implementation of an intelligence database
[AD-A154095] p 70 N85-30973

Keeping the nation's secrets: A report to the Secretary of Defense by the Commission to Review DoD Security Policies and Practices
[AD-A181986] p 110 N86-24562

INTERACTIVE CONTROL

Modeling and analysis of teams of interacting decisionmakers with bounded rationality
p 57 A84-21644

ARIADNE - A knowledge-based interactive system for planning and decision support
p 57 A84-33493

A systems approach to ATE documentation
p 62 A85-26824

Intelligent interfaces for human control of advanced automation and smart systems
p 47 A86-21889

Use of artificial intelligence in supervisory control
p 44 N86-20684

GEO-EAS (Geostatistical Environmental Assessment Software) user's guide
[PB86-151252] p 89 N86-27261

INTERFACES

The man-machine interface in computerized telemetry systems
p 46 A84-32429

An approach to user specification of interactive display interfaces
p 47 A85-43401

Modeling the user in intelligent user interfaces
[DE84-012684] p 50 N84-14795

Logical optimization for database uniformization
[NASA-CR-173836] p 5 N84-32282

Networking
p 21 N84-34381

A model for graphics interface tool development
p 70 N85-34545

Reference model for DBMS (database management system) standardization
[PB85-225217] p 9 N86-18923

The DGO gateway information system directory of resources
[AD-A174154] p 25 N87-16658

Integration of communications with the Intelligent Gateway Processor
[DE87-002386] p 25 N87-19981

The development of a prototype intelligent user interface subsystem for NASA's scientific database systems
[NASA-TM-87821] p 53 N87-24096

Capitalizing on experience with intelligence gateway software
[AD-A183382] p 99 N86-27971

Computer Science and Statistics. Proceedings of the 18th Symposium on the Interface
[AD-A181296] p 28 N86-13901

Concepts and implementations of natural language query systems
[NASA-CR-184514] p 60 N86-14954

The design of PC/MISL, a PC-based common user interface to remote information storage and retrieval systems
[NASA-CR-184523] p 55 N86-14963

The design of PC/MISL, a PC-based common user interface to remote information storage and retrieval systems. Presentation visuals
[NASA-CR-184524] p 55 N86-14964

- DEC Ada Interface to Screen Management Guidelines (SMG) p 101 N89-18303
An architecture for integrating distributed and cooperating knowledge-based Air Force decision aids p 44 N89-19841
SARSCEST (human factors) p 55 N89-19890
SIRE: A Simple Interactive Rule Editor for NCBCES p 78 N89-21730
An asynchronous interface between a natural language query interpreter and a database management system [AD-A208918] p 57 N89-26779

INTERNATIONAL COOPERATION

- The Consultative Committee for Space Data Systems (CCSDS) planned and potential use of the recommendations [IAF PAPER 86-303] p 1 A87-18003
Space Station Information System - Concepts and international issues [IAF PAPER 87-78] p 84 A88-15851
Maintaining outer space for peaceful purposes through international cooperation p 2 A89-12104
International space plans and policies - Future roles of international organizations [IAF PAPER 88-822] p 113 A89-17871
International banking of satellite and in-situ wave data by the Marine Information and Advisory Services (MIAS) p 60 N85-12434
Competitive assessment of the US information services industry [PB84-174804] p 7 N85-12803
Information information networks for material properties. Revision 1 [DE85-007412] p 22 N85-27572
International Space Policy for the 1990's and Beyond, no 66 [GPO-82-158] p 114 N89-12496
Relevance of international research facilities to international stability [DE89-009400] p 103 N89-23380

INTERNATIONAL LAW

- Adjusting legal regimes to new commercial realities p 112 A86-34121
The station is raising lots of questions about space law p 113 A87-34597
Remote sensing and the First Amendment p 113 A88-19630
Space stations and the law: Selected legal issues [PB87-118220] p 114 N87-21754

INTERNATIONAL RELATIONS

- Relevance of international research facilities to international stability [DE89-009400] p 103 N89-23380

INTERNATIONAL SYSTEM OF UNITS

- Guidelines for metric transition of software [PB86-240215] p 17 N87-70232

INTERNATIONAL TRADE

- U.S. government policies and hypersonic flight in the 21st century p 3 A89-41654

INTERPROCESSOR COMMUNICATION

- Beyond the data base: Technology for information resource management [AD-A138640] p 4 N84-23402
The implementation of a multi-backend database system (MDBS) Part 4: The revised concurrency control and directory management processes and the revised definitions of inter-process and inter-computer messages [AD-A140874] p 21 N84-27453
IBM's token-ring LAN (Local-Area Network): A base-level communications solution [AD-A143446] p 21 N84-33063
The DOD gateway information system directory of resources [AD-A174154] p 25 N87-16658
Toward highly portable database systems: Issues and solutions [AD-A174835] p 11 N87-20131
DoD Gateway Information System (DGIS) common command language: The first prototyping and the decision for artificial intelligence [AD-A185950] p 39 N88-15725

INVENTORIES

- Information resources management p 17 N89-23371
Proceedings of the 14th Annual Conference of the Department of Energy/Contractor Information Management Association [DE88-000230] N88-70731
Using bar code technology to enhance classified document accountability p 112 N88-70733

IUE

- IUE archived spectra [NASA-TM-100715] p 101 N89-15829
The IUE data bank: Statistics and future aspects p 115 N89-16609

J

JUDGMENTS

- Information search in judgment tasks. The effects of unequal cue validity and cost [AD-A141712] p 5 N84-29437

K

KINEMATICS

- ExpertVision - A video-based non-contact system for motion measurement p 35 A89-45136

KNOWLEDGE

- Incorporating knowledge rules in a semantic data model - An approach to integrated knowledge management p 32 A87-18697
Research on interactive acquisition and use of knowledge [AD-A131306] p 35 N84-11823
Foundation: Transforming data bases into knowledge bases p 39 N86-18423

KNOWLEDGE BASES (ARTIFICIAL INTELLIGENCE)

- Applications of artificial intelligence VI. Proceedings of the Meeting, Orlando, FL, Apr. 4-8, 1986 [SPIE-937] p 34 A89-33677
Real-time knowledge-based monitoring of telemetry data p 34 A89-33685
Computer architectures for very large knowledge bases p 41 N89-12294
Knowledge base maintenance using logic programming methodologies p 42 N89-12295
Planner system for the application of indications and warning p 42 N89-13188
Plan recognition, knowledge acquisition and explanation in an intelligent interface p 42 N89-13191
The NC (Numerically Controlled) assistant: Interfacing knowledge based manufacturing tools to CAD/CAM systems [DE88-018742] p 42 N89-14709
System integration of knowledge-based maintenance aids p 42 N89-14768
Knowledge based systems: A critical survey of major concepts, issues, and techniques [NASA-CR-184517] p 42 N89-14957
Knowledge based systems: A critical survey of major concepts, issues and techniques. Visuals [NASA-CR-184518] p 43 N89-14958
KARL: A Knowledge-Assisted Retrieval Language [NASA-CR-184529] p 43 N89-14960
Case-based reasoning: The marriage of knowledge base and data base p 43 N89-15574
Automated knowledge base development from CAD/CAE databases p 43 N89-15585
An architecture for integrating distributed and cooperating knowledge-based Air Force decision aids p 44 N89-19841
SARSCEST (human factors) p 55 N89-19890
SIRE: A Simple Interactive Rule Editor for NCBCES p 78 N89-21730
Core knowledge system: Storage and retrieval of inconsistent information p 45 N89-23132
An intelligent user interface for browsing satellite data catalogs p 70 N89-26601

KNOWLEDGE REPRESENTATION

- Knowledge representation and natural-language semantics [AD-A146025] p 37 N85-12615
Advanced techniques for the storage and use of very large, heterogeneous spatial databases: The representation of geographic knowledge: Toward a universal framework - relations (mathematics) [NASA-CR-181517] p 39 N88-12421
KREWE (Knowledge Representation, Editing and Modeling Environment) A user's introduction, phase 1 [AD-A188906] p 39 N88-20052
Computer architectures for very large knowledge bases p 41 N89-12294
Knowledge base maintenance using logic programming methodologies p 42 N89-12295
SNEPS considered as a fully intentional propositional semantic network p 27 N89-13184
Plan recognition, knowledge acquisition and explanation in an intelligent interface p 42 N89-13191
Knowledge based systems: A critical survey of major concepts, issues, and techniques [NASA-CR-184517] p 42 N89-14957
Knowledge based systems: A critical survey of major concepts, issues and techniques. Visuals [NASA-CR-184518] p 43 N89-14958
Intent inferring with a model-based operator's associate [REPT-88-2] p 56 N89-20695
OFMTutor: An operator function model intelligent tutoring system p 56 N89-20696

L

LABORATORIES

- The flow of scientific and technical information in the US Army Research Laboratories [AD-A155050] p 9 N86-33043
Laboratory technical information system: analysis phase [DE85-018311] p 95 N86-17219
Laboratory Information Management System (LIMS) A case study [NASA-TM-100635] p 26 N88-21697

LAND MANAGEMENT

- Concept for a satellite-based global reserve monitoring system p 66 A89-41152

LAND USE

- Air Force geographic information and analysis system [DE88-001420] p 74 N88-18505

LANDING AIDS

- The specification and design of a system using computer-aided software engineering and performance analysis tools [AIAA PAPER 88-4410] p 19 A88-51934

LARGE SCALE INTEGRATION

- VLSI architectures for pattern analysis and image database management p 20 N84-19163

LARGE SPACE STRUCTURES

- The integrated analysis capability (IAC Level 2.0) p 19 A89-12180

LASER APPLICATIONS

- Optical laser technology, specifically CD-ROM (Compact Disc - Read Only Memory) and its application to the storage and retrieval of information [AD-A184111] p 74 N88-12086

LAUNCH VEHICLE CONFIGURATIONS

- Integrated structural analysis for rapid design support p 18 A88-18630

LAW (JURISPRUDENCE)

- Legal considerations and cooperative opportunities for space commercial activities p 113 N85-11013
Annotated bibliography of publications dealing with occupational health and medical information systems, cost analysis procedures, evaluation methodology and related legal issues [AD-A158650] p 84 N86-11078

LEADERSHIP

- Management and the executive [AD-A190778] p 86 N88-25374

LEARNING

- Memory-based expert systems [AD-A145812] p 27 N85-11628

LEARNING THEORY

- Machine learning Part 1: A historical and methodological analysis [AD-A131424] p 36 N84-11824
Research on interactive acquisition and use of knowledge [AD-A137436] p 36 N84-20270
Examining learning theory of online information retrieval systems and applications in computer-aided instruction: Implications for the Defense Technical Information Center's computer-aided instruction [AD-A159001] p 38 N86-15213
Man-machine systems of the 1990 decade: Cognitive factors and human interface issues [AD-A163865] p 52 N86-25123

LEGAL LIABILITY

- New technologies and intellectual property: An economic analysis [N-2601-NSF] p 114 N88-10695

LIBRARIES

- A library collection of software documentation specific to astronomical data reduction p 91 A89-27235
Local automation model: System specification [AD-A141503] p 92 N84-29796
A decade of accomplishment [ISSN-0091-2972] p 93 N84-33283
Evaluation of the National Library of Medicine's programs in the medical behavior sciences. Online searchers' reactions to database and vendor capabilities in the Medical Behavioral Sciences (MBS), study 4 [PB84-230523] p 93 N85-12798
National Archives and Records Service (NARS) twenty year preservation plan [PB85-177640] p 84 N85-29654
A comparative study of OCLC, Inc. and the Washington Library Network in twenty-nine Pacific Northwest academic libraries p 109 N86-15208
Integrated bibliographic information system: Integrating resources by integrating information technologies [AD-A157700] p 95 N86-15211
Microcomputer-based local automation model: Functional description [AD-A160610] p 95 N86-19002

The Integrated bibliographic information system. Resource sharing tailored for local needs [AD-A181700] p 95 N86-21431

Measuring the value of information and information systems, services and products p 97 N86-28799

Integrated library system at ORNL LION [DE86-00867] p 97 N86-31448

State of the art of geoscience libraries and information services [DE86-011186] p 97 N86-33207

Microcomputer-based local automation model. System planning guidance [AD-A188136] p 98 N87-11630

Information analysis centers in the department of defense, revision [AD-A184002] p 98 N86-12420

Evaluating the performance of information center staff p 14 N89-11829

Evaluating performance of information center operations and services p 14 N89-11630

A framework for evaluating the effectiveness of information centers and services p 14 N89-11631

Evaluating for information center planning p 15 N89-11632

IUE archived spectra [NASA-TM-100715] p 101 N89-15829

Automated library systems and document tracking systems. Commercial software alternatives, volume 1 [DE89-007718] p 102 N89-21706

A project for developing a linear algebra library for high-performance computers [DE89-007501] p 78 N89-22374

The Shared Bibliographic Input Network (SBIN). A summary of the experiment [AD-A133001] p 104 N84-75065

Information Management in the Department of Defense. The role of libraries [AD-A130345] p 80 N85-70560

LIFE SCIENCES

A shared-world conceptual model for integrating space station life sciences telepresence operations p 55 N88-30333

Data base development and research and editorial support [NASA-CR-183249] p 89 N89-28440

LIFE SUPPORT SYSTEMS

Local resource utilization and integration into advanced mission's LSS [SAE PAPER 881053] p 65 A89-27851

LINGUISTICS

Computer software for working with language p 48 A84-44671

Inquiry semantics. A functional semantics of natural language grammar [AD-A135153] p 36 N84-17929

LITERATURE

Translations of scientific and technical literature. A guide to their location p 99 N88-23686

Technical report literature in chemistry and engineering. Bibliometric and content analysis p 102 N89-22525

Bibliographic coupling among scientific papers in biological research specialties p 103 N89-25771

LOCAL AREA NETWORKS

Knowledge-based network operations p 34 A89-33679

Guide to sharing personal computer resources via local area networks, revised [DE86-018066] p 25 N87-20772

Lewis Information Network (LINK) Background and overview [NASA-TM-100182] p 25 N88-11925

LOGIC CIRCUITS

A database management system for computer-aided digital circuit design [AD-A208047] p 79 N89-24066

LOGIC DESIGN

Knowledge representation and natural language semantics [AD-A146025] p 37 N85-12615

LOGIC PROGRAMMING

DOD Gateway Information System (DGIS) common command language. Prolog knowledge base profile. Common command language report no 3 [AD-A188150] p 99 N88-16574

Knowledge base maintenance using logic programming methodologies p 42 N89-12295

The DoD Gateway Information System (DGIS) The development toward artificial intelligence and hypermedia in common command language [AD-A203674] p 102 N89-20869

LOGICAL ELEMENTS

A natural language interface for a PROLOG database [AD-A138071] p 51 N84-22254

LOGISTICS

Experiments on the cognitive aspects of information seeking and information retrieving [PB87-157899] p 38 N87-24238

Microfilm and computer full text of archival documents [AD-A204055] p 103 N89-23377

LOGISTICS MANAGEMENT

Improving the defense energy information system (DEIS) [AD-A153524] p 84 N85-29849

Development of a dBase III plus database for office automation within the Department of Logistics Management, School of Systems and Logistics [AD-A202628] p 18 N89-22354

LCRAN C

LORAN C Offshore Flight Following (LOFF) in the Gulf of Mexico [AD-A197179] p 75 N89-12553

M

MACHINE LEARNING

Machine learning. Part 1. A historical and methodological analysis [AD-A131424] p 36 N84-11824

MAGNETIC TAPES

Description of a tentative US-USSR common communication format [DE86-004678] p 96 N86-25681

MAINTAINABILITY

An evaluation of two reliability and maintainability information systems [AD-A143436] p 58 N84-33290

MAINTENANCE

ShEPS considered as a fully intentional propositional semantic network p 27 N89-13184

System integration of knowledge-based maintenance aids p 42 N89-14766

Electronic information delivery at the job site [DE89-009726] p 17 N89-27350

MAN MACHINE SYSTEMS

Modeling and analysis of teams of interacting decisionmakers with bounded rationality p 57 A84-21644

The man-machine interface in computerized telemetry systems p 46 A84-32429

ARIADNE - A knowledge-based interactive system for planning and decision support p 57 A84-33463

Intelligent interfaces for human control of advanced automation and smart systems p 47 A86-21889

EXAMINE - An expert system to mediate human computer dialogues p 47 A86-23740

Human Factors Society, Annual Meeting, 29th, Baltimore, MD, September 29-October 3, 1985, Proceedings, Volumes 1 & 2 p 47 A86-33778

Man/System Integration Standards for space systems p 48 A87-33020

NASA-STD-3000, Man-System Integration Standards - The new space human engineering standards [IAF PAPER 87-550] p 49 A88-16187

Human Factors Society, Annual Meeting, 31st, New York, NY, Oct. 19-23, 1987, Proceedings, Volumes 1 & 2 p 49 A88-35401

Empirical user modeling - Command usage analyses for deriving models of users p 49 A88-35404

The effects of different data base formats on information retrieval p 58 A88-35483

Fallible humans and vulnerable systems - Lessons learned from aviation p 50 A88-46511

Integrated resource scheduling in a distributed scheduling environment - for space stations p 80 A89-21808

A pilot's view of intelligent systems p 50 A89-45294

Modeling the user in intelligent user interfaces [DE84-012664] p 50 N84-14795

Research on interactive acquisition and use of knowledge [AD-A137436] p 36 N84-20270

Beyond the data base Technology for information resource management [AD-A138840] p 4 N84-23402

Management information systems. A need for human factors [AD-P003313] p 51 N84-28452

A management workstation concept [AD-A145817] p 83 N85-11906

Preserving the time dimension in information systems p 37 N85-12784

Sector suite man-machine functional capabilities and performance requirements [AD-A148881] p 52 N85-19647

Efforts at office automation and information systems utilization at Martin Marietta Energy Systems, Incorporated [DE85-008154] p 3 N85-28633

Automated Information Management Technology (AIM-TECH) Considerations for a technology investment strategy [AD-A181139] p 38 N86-20173

The DOD gateway information system [AD-A181701] p 96 N86-21432

Design of graphic displays in computerized systems [AD-A181890] p 71 N86-24227

Man-machine systems of the 1990 decade. Cognitive factors and human interface issues [AD-A183955] p 52 N86-25123

Knowledge-based load leveling and task allocation in human-machine systems p 53 N86-32965

Satisficing decision-making in supervisory control, part 2 [AD-A174631] p 59 N87-20126

Artificial intelligence developments re DOD Gateway Information System (DGIS) and Defense Applied Information Technology Center (DAITC) [AD-A181101] p 111 N87-27550

A personalized and prescriptive decision aid for choice from a database of options [AD-A186726] p 59 N86-20620

SARSCST (human factors) p 55 N89-19890

Fastbus standard routines [DOE/ER-0367] p 29 N89-20645

Use of artificial intelligence in supervisory control p 44 N89-20694

Intent inferring with a model-based operator's associate [REPT-88-2] p 56 N89-20695

OFMTutor: An operator function model intelligent tutoring system p 56 N89-20696

A survey of intelligent tutoring systems. Implications for complex dynamic systems p 56 N89-20697

Design considerations for human-computer dialogues [AD-A159265] p 57 N86-70447

MAN-COMPUTER INTERFACE

EXAMINE - An expert system to mediate human-computer dialogues p 47 A86-23740

An architecture for intelligent interfaces - Outline of an approach to supporting operators of complex systems p 48 A87-16618

The development of an intelligent user interface for NASA's scientific databases p 48 A87-28445

An approach to autonomous attitude control for spacecraft [AAS PAPER 88-004] p 33 A89-20633

Cockpit information management through an intelligent pilot/vehicle interface [AIAA PAPER 89-2098] p 50 A89-49456

User interface design for two dimensional polygonally encoded geological survey maps [AD-A170612] p 53 N87-13840

Proceedings of the 2nd Conference on Computer Interfaces and Intermediaries for Information Retrieval [AD-A174000] p 53 N87-16657

Optimal combination of information from multiple sources, part 3 [AD-A174726] p 59 N87-19913

The evaluation and extension of TAE in the development of a user interface management system p 53 N87-23158

Artificial intelligence developments re DOD Gateway Information System (DGIS) and Defense Applied Information Technology Center (DAITC) [AD-A181101] p 111 N87-27550

Advanced Information Processing System (AIPS) proof-of-concept system functional requirements I/O network system services [NASA-CR-181481] p 12 N88-12412

Methods of eliciting information from experts [AD-A187466] p 54 N88-18189

The Scientific and Technical Information Network (STINET) Foundation for evolution [AD-A189750] p 99 N88-22922

ISTAR evaluation [AD-A201345] p 87 N89-19903

Use of artificial intelligence in supervisory control p 44 N89-20694

Intent inferring with a model-based operator's associate [REPT-88-2] p 56 N89-20695

OFMTutor: An operator function model intelligent tutoring system p 56 N89-20696

A survey of intelligent tutoring systems. Implications for complex dynamic systems p 56 N89-20697

Increasing user-friendliness in AI systems [DE89-005093] p 56 N89-20704

Shared resource control between human and computer p 57 N89-26580

- The utilization of neural nets in populating an object-oriented database p 45 N89-26599
- A rapid prototyping/artificial intelligence approach to space station-era information management and access p 46 N89-26600
- An intelligent user interface for browsing satellite data catalogs p 79 N89-26601
- A multimedia database management system supporting contents search in media data [AD-A207070] p 103 N89-26780
- An implementation of a data definition facility for the graphics language for database [AD-A207380] p 89 N89-28442
- Design considerations for human-computer dialogues [AD-A159265] p 57 N86-70447
- ### MANAGEMENT
- Management: A bibliography for NASA managers [NASA-SP-7500(19)] p 83 N85-26439
- Management: A bibliography for NASA managers [NASA-SP-7500(20)] p 85 N86-27106
- Organizations as information processing systems
- Environmental characteristics, company performance and chief executive scanning, an empirical study [AD-A168035] p 10 N86-33201
- Management: A bibliography for NASA managers (supplement 21) [NASA-SP-7500(21)] p 85 N87-20833
- Management and the executive [AD-A190778] p 86 N88-25374
- ### MANAGEMENT INFORMATION SYSTEMS
- Developments in decision support systems p 57 A85-31792
- A systematic method for evaluating security requirements compliance p 105 A85-42597
- Characteristics of R&D management which influence information needs p 2 A88-10402
- Space Station Information Systems [IAF PAPER 88-059] p 80 A88-55330
- Management information system for engineering [DE84-001655] p 81 N84-14984
- Requirements analysis for forward funding tracking system, volume 1 [AD-A136840] p 81 N84-20425
- Requirements analysis for milestone tracking system, volume 2 [AD-A136841] p 81 N84-20426
- Human engineering guidelines for management information systems Change 1 [AD-A137806] p 61 N84-21104
- NASA Administrative Data Base Management Systems, 1983 [NASA-CP-2304] p 81 N84-21403
- Action Information Management System (AIMS) A user's view p 82 N84-21405
- Automated RTOP management system p 82 N84-21406
- Intercenter Problem Reporting and Corrective Action System (PRACAS) p 3 N84-21408
- Automated administrative data bases p 82 N84-21411
- NASA-wide standard administrative systems p 82 N84-21415
- Managing geometric information with a data base management system p 67 N84-22211
- Mechanized contract document preparation and abstract system [AD-P002750] p 4 N84-23297
- The acquisition management information system: Friend or foe? [AD-P002751] p 67 N84-23298
- Prototype development of an information-sharing and decision support system for the manpower personnel and training community [AD-P003310] p 68 N84-28451
- Management information systems: A need for human factors [AD-P003313] p 51 N84-28452
- Success with Data Management 4 at the DOE Pinellas Plant [DE84-006021] p 82 N84-29802
- NASA Administrative Data Base Management Systems, 1984 [NASA-CP-2323] p 82 N84-33266
- Effective organizational solutions for implementation of DBMS software packages p 5 N84-33268
- Administrative automation in a scientific environment p 82 N84-33269
- The administrative window into the integrated DBMS p 82 N84-33270
- A user view of office automation or the integrated workstation p 6 N84-33271
- Strip and load data p 6 N84-33273
- NASA metrology information system: A NEMS subsystem p 68 N84-33279
- An evaluation of two reliability and maintainability information systems [AD-A143438] p 58 N84-33290
- Sandia National Laboratories administrative data processing systems [DE84-014328] p 82 N84-34202
- Managing microcomputers: A survival kit for functional managers [AD-A144006] p 21 N84-34316
- The creation of a central database on a microcomputer network [AD-A143875] p 21 N84-34326
- Data dictionary systems and their role in information resource management [AD-A144905] p 6 N85-10659
- A management workstation concept [AD-A145617] p 83 N85-11906
- Maintenance Management Information and Control System (MMICS): Administrative boon or burden [AD-A145782] p 83 N85-12790
- Executive information system [DE84-015355] p 83 N85-13675
- General design considerations of an Air Force information system [AD-A150611] p 7 N85-23449
- An analysis of data dictionaries and their role in information resource management [AD-A152134] p 7 N85-27121
- Data dictionary design as a stepping-stone to DBMS (Data Base Management System) implementation in the Indonesian Army Data Collecting and Processing Service [AD-A152101] p 84 N85-27752
- DLA: Data/data base administration analysis [AD-A153031] p 8 N85-28879
- Improving the defense energy information system (DEIS) [AD-A153524] p 84 N85-29849
- Test and Evaluation Master Plan (TEMP) for the Navy Occupational Health Information Management System (NOHIMS) Phase 1 Appendix A through appendix U [AD-A154179] p 84 N85-30987
- Integration of office automation within computing [DE85-010021] p 9 N85-33736
- Technical and management information system: The tool for professional productivity on the space station program p 84 N85-15171
- Microcomputer-based local automation model: Functional description [AD-A160610] p 95 N86-19002
- The DOD gateway information system [AD-A161701] p 96 N86-21432
- Advanced Technology Unit Training and Management System (ATUTMS) User's guide [NASA-CR-176643] p 71 N86-22130
- Development of a computer-managed readiness assessment system [AD-A162931] p 71 N86-24215
- Systematic corporate planning at DTIC (Defense Technical Information Center) [AD-A171525] p 11 N87-15902
- Satisficing decision-making in supervisory control, part 2 [AD-A174631] p 59 N87-20128
- The success or failure of management information systems: A theoretical approach [DE87-007802] p 85 N87-24233
- Management and the executive [AD-A190778] p 86 N88-25374
- Evaluating performance of information centre operations and services p 14 N89-11630
- The design of PC/MIS: A PC-based common user interface to remote information storage and retrieval systems: Presentation views [NASA-CR-184524] p 55 N89-14964
- Planning and controlling the acquisition costs of Air Force information systems [AD-A204421] p 16 N89-22528
- Structured requirements determination for information resources management [AD-A204764] p 62 N89-225
- Advanced computing systems: An advanced reasoning-based development paradigm for Ada trusted systems and its application to MACH [AD-A206308] p 45 N89-24070
- Management Information Database System [DE89-014595] p 89 N89-27597
- A systematic approach to human factors measurement [AD-A132423] p 57 N84-71658
- The Shared Bibliographic Input Network (SBIN): A summary of the experiment [AD-A133001] p 104 N84-75065
- Egyptian National System for Scientific and Technical Information Design study [PB84-179423] p 80 N84-75267
- Design considerations for human-computer dialogues [AD-A159265] p 57 N86-70447
- ### MANAGEMENT METHODS
- Artificial intelligence: New tools for aerospace project managers p 32 A86-34986
- Managing microcomputers: A survival kit for functional managers [AD-A144006] p 21 N84-34316
- Maintenance Management Information and Control System (MMICS): Administrative boon or burden [AD-A145782] p 83 N85-12790
- Design of a scientific information collation and dissemination system, volumes 1 thru 3 [AD-A146002] p 59 N85-12791
- Security of personal computer systems: A management guide [PB85-161040] p 109 N85-24793
- Future information technology, 1984 telecommunications [PB85-165850] p 22 N85-26173
- Management: A bibliography for NASA managers [NASA-SP-7500(19)] p 83 N85-26439
- Management: A bibliography for NASA managers [NASA-SP-7500(20)] p 85 N86-27106
- Management: A bibliography for NASA managers (supplement 21) [NASA-SP-7500(21)] p 85 N87-20833
- Management and the executive [AD-A190778] p 86 N88-25374
- Federal information resources management: Bridging vision and action p 15 N89-12488
- Automated library systems and document tracking systems: Commercial software alternatives, volume 1 [DE89-007716] p 102 N89-21705
- Managing federal information resources: Third annual report under the Paperwork Reduction Act of 1980 [PB84-228641] p 17 N86-71554
- User's guide for the training database system, version 2 [DE88-016653] p 80 N89-70023
- User's guide for the ENGNODE database system for LBL engineering notes, version 1.2 [DE88-016652] p 80 N89-70024
- Controlling resources in the Apollo program p 17 N89-70436
- ### MANAGEMENT PLANNING
- ARIADNE - A knowledge-based interactive system for planning and decision support p 57 A84-33463
- The microcomputer in the acquisition environment [AD-P002748] p 67 N84-23295
- Mechanized contract document preparation and abstract system [AD-P002750] p 4 N84-23297
- The acquisition management information system: Friend or foe? [AD-P002751] p 67 N84-23298
- Guidelines for contingency planning NASA (National Aeronautics and Space Administration) ADP security risk reduction decision studies [PB84-189836] p 108 N84-30737
- Effective organizational solutions for implementation of DBMS software packages p 5 N84-33268
- DTIC 2000: A corporate plan for the future [AD-A143900] p 6 N84-34327
- Five-year plan for meeting the automatic data processing and telecommunications needs of the Federal Government, Volume 2: Major information technology systems acquisition plans of Federal executive agencies, 1984-1989 [PB84-214519] p 21 N85-12778
- IRM (Information Resources Management) long-range plan: Fiscal year 1984-1988 (update) Volume 2: ADP and telecommunications acquisition plan [PB84-229244] p 6 N85-12796
- Schema-based theory of information presentation for distributed decision making [AD-A163150] p 58 N86-25992
- How Ebenezer Scrooge and Peter Drucker are helping shape DoD's Scientific and Technical Information Program [AD-A165640] p 96 N86-28779
- Systematic corporate planning at DTIC (Defense Technical Information Center) [AD-A171525] p 11 N87-15902
- Management: A bibliography for NASA managers (supplement 21) [NASA-SP-7500(21)] p 85 N87-20833
- Planning and controlling the acquisition costs of Air Force information systems [AD-A204421] p 16 N89-22528
- The Shared Bibliographic Input Network (SBIN): A summary of the experiment [AD-A133001] p 104 N84-75065

MANAGEMENT SYSTEMS

Evaluation of expert systems - An approach and case study - of determining software functional requirements for command management of satellites

p 48 A87-14716

Evaluative report on the Institute for Computer Sciences and Technology, National Bureau of Standards, fiscal year 1984

[PB85-178087] p 6 N85-31848

A database management system for computer-aided digital circuit design

[AD-A208047] p 79 N89-24086

Performance issues in management of the Space Station Information System

[NASA-CR-185408] p 88 N89-25773

Resource contention management in parallel systems

[AD-A208089] p 32 N89-22332

MANIPULATED SPACE FLIGHT

NASA-STD-3000, Man-System Integration Standards -

The new space human engineering standards

[IAF PAPER 87-550] p 49 A88-16167

Local resource utilization and integration into advanced mission's LSS

[SAE PAPER 881053] p 65 A89-27651

MANPOWER

Prototype development of an information-sharing and decision support system for the manpower personnel and training community

[AD-P003310] p 66 N84-28451

Design considerations for human-computer dialogues

[AD-A158285] p 57 N86-70447

MANUAL CONTROL

Air Force Geophysics Laboratory management information system study

[AD-A161910] p 65 N86-24561

MANUALS

Intelligent information retrieval from on-line technical documentation

[AD-P003946] p 37 N85-11626

Technology transfer primer

[PB86-205341] p 73 N87-12404

DDO (Department of Defense) Procedures for

Management of Information Requirements

[PB97-155495] p 12 N87-24227

Life cycle management handbook

[DE89-004315] p 15 N89-17545

User's guide for the ENGNOTE database system for

LBL engineering notes, version 1.2

[DE88-016852] p 80 N89-70024

MANUFACTURING

Videotape premastering facility

[PB84-135821] p 20 N84-20840

MAPPING

User interface design for two dimensional polygonally encoded geological survey maps

[AD-A170612] p 53 N87-13840

Information resources management

p 17 N89-23371

M/PS

GEO-EAS (Geostatistical Environmental Assessment Software) user's guide

[PB89-151252] p 69 N89-27261

MARKET RESEARCH

Report on U.S. domestic and international

telecommunications and information markets

[PB84-186362] p 21 N84-27602

MARKETING

Identifying users and how to reach them

p 102 N89-23370

MARKING

Using bar code technology to enhance classified document accountability

p 112 N88-70733

MATERIALS

Sources and standards for computerized materials

property data and intelligent knowledge systems

p 33 A89-12182

MATERIALS HANDLING

Materials Information for Science and Technology (MIST) Project overview Phase 1 and 2 and general

considerations

[DE87-006799] p 73 N87-23312

Information network for numeric databases of materials

properties

[DE87-010512] p 74 N87-28460

MATERIALS SCIENCE

Computerized numeric databases for materials

properties

p 63 A87-13162

Experience, methods and prospects in commercial

online materials data distribution

p 63 A87-13162

Optical Information Processing for Aerospace

Applications 2

[NASA-CP-2302] p 67 N84-22402

Prototype material properties data network

[NASA-TM-89243] p 24 N86-33208

MATHEMATICAL MODELS

Remote Sensing Information Sciences Research Group,

Santa Barbara Information Sciences Research Group, year

3

[NASA-CR-178789] p 72 N86-32863

Subjective probability, combination of expert opinion and probabilistic approaches to information retrieval

p 74 N88-13085

Computer-aided fabrication system implementation

[AD-A203661] p 88 N89-21576

Information acquisition for model construction: An integrative, decision-theoretic perspective

p 81 N89-21705

Reusing structured models via model integration

[AD-A204852] p 30 N89-22369

MEASURING INSTRUMENTS

NASA meteorology information system. A NEMS

subsystem

p 68 N84-33279

MECHANICAL ENGINEERING

Developments in interdisciplinary simulation and design

software for mechanical systems

p 19 A89-26248

Completion of abstracts of theses submitted by

candidates for degrees

[AD-A151722] p 83 N85-27739

Documentation of materials data for computer storage

and retrieval

[DE86-008509] p 72 N87-11493

MECHANICAL PROPERTIES

Computerized numeric databases for materials

properties

p 63 A87-13162

Prototype material properties data network

[NASA-TM-89243] p 24 N86-33208

Documentation of materials data for computer storage

and retrieval

[DE86-008509] p 72 N87-11493

MEDICAL SCIENCE

Notes for medical catalogs, 1983

[PB84-185374] p 6 N84-33295

Evaluation of the National Library of Medicine's

programs in the medical behavior sciences. Online

searchers' reactions to database and vendor capabilities

in the Medical Behavioral Sciences (MBS), study 4

[PB84-230623] p 83 N85-12798

MEDICAL SERVICES

Test and Evaluation Master Plan (TEMP) for the Navy

Occupational Health Information Management System

(NOHMS) Phase 1: Appendix A through appendix U

[AD-A154179] p 84 N85-30867

Annotated bibliography of publications dealing with

occupational health and medical information systems, cost

analysis procedures, evaluation methodology and related

legal issues

[AD-A158650] p 94 N86-11078

MEMORY

Effects of display proximity and memory demands on

the understanding of dynamic multidimensional

information

p 48 A87-33044

Information theoretic models of memory in human

decisionmaking models

[AD-P002863] p 51 N84-22844

Beyond associations: Strategic components in memory

retrieval

[AD-A160783] p 52 N86-18985

Man-machine systems of the 1990 decade: Cognitive

factors and human interface issues

[AD-A163865] p 52 N86-25123

Content-Addressable Memory manager Design and

evaluation

[AD-A164037] p 23 N86-25133

Memory and subjective workload assessment

p 52 N86-32983

Computer technologies and institutional memory

p 55 N89-20062

MEMORY (COMPUTERS)

Information capacity of associative memories

p 20 A89-39600

A process activity monitor for AOS/VIS

[NASA-TM-86535] p 109 N86-19950

ELEFUNT test results under FORTRAN-PLUS on the

active memory technology DAP 510-8

[DE86-017264] p 28 N83-14700

Compiling high level constructs to distributed memory

architectures

[NASA-CR-181825] p 30 N89-24058

Algorithm for supporting views in the microcomputer

environment

[PB89-174155] p 32 N89-71248

MENTAL PERFORMANCE

Subjective workload and individual differences in

information processing abilities

[SAE PAPER 841491] p 47 A86-26011

Strategy and optimization in human information

processing

p 48 A87-33502

The model human processor - An engineering model

of human performance

p 49 A87-33532

Metaphor and common-sense reasoning

[AD-A131423] p 35 N84-11754

Design and implementation of an intelligence

database

[AD-A154085] p 70 N86-33773

Design of graphic displays in computerized systems

[AD-A161890] p 71 N85-24227

Scheme-based theory of information presentation for

distributed decision making

[AD-A163150] p 58 N86-25882

Memory and subjective workload assessment

p 52 N86-32983

Knowledge-based load leveling and task allocation in

human-machine systems

p 53 N86-32985

Knowledge retrieval as specialized inference

[AD-A188042] p 38 N89-20899

MESSAGE PROCESSING

Integrated resource scheduling in a distributed

scheduling environment - for space stations

p 80 A89-21808

Generic Ada code in the NASA space station command

control and cryofunctions environment

p 29 N89-16241

Compiling high level constructs to distributed memory

architectures

[NASA-CR-181825] p 30 N89-24058

MESSAGES

Performance issues in management of the Space Station

Information System

[NASA-CR-185408] p 88 N89-25773

METALS

Prototype material properties data network

[NASA-TM-89243] p 24 N86-33208

METEOROLOGICAL PARAMETERS

Guidelines on the structure, management, and operation

of climate data centers

[WCP-89] p 72 N86-32908

A comparison of typical meteorological year solar

radiation information with the SOLMET data base

[DE86-008242] p 75 N86-29247

METEOROLOGICAL RADAR

The Remote Atmospheric Probing Information Display

(RAPID) system

[AD-A186314] p 75 N89-10500

METEOROLOGICAL SATELLITES

The Remote Atmospheric Probing Information Display

(RAPID) system

[AD-A186314] p 75 N89-10500

METEOROLOGICAL SERVICES

The Flight Service Automation System

p 46 A84-44551

METEOROLOGY

Completion of abstracts of theses submitted by

candidates for degrees

[AD-A151722] p 83 N85-27739

Acquisition, use and archiving of real-time data

[DE86-014769] p 25 N87-18282

A comparison of typical meteorological year solar

radiation information with the SOLMET data base

[DE86-008242] p 75 N86-29247

Meteorological processes for regulatory models

(MPPRM-11) user's guide

[PB88-127526] p 78 N89-22168

Hanford meteorological station computer codes. Volume

9. The quality assurance computer codes

[DE89-008414] p 78 N89-22295

METHODOLOGY

A design methodology for on-line menu-driven

information retrieval systems

p 96 N86-24558

MICROCOMPUTERS

Requirements analysis for forward funding tracking

system, volume 1

[AD-A136840] p 81 N84-20424

The microcomputer in the acquisition environment</

- Microcomputer-based detachment administrative management system for the LAMPS (Light Airborne Multi-Purpose System) community. A requirements analysis [AD-A182366] p 85 N86-24552
- Content-Addressable Memory manager: Design and evaluation [AD-A164037] p 23 N86-25133
- Microcomputer-based local automation model: System planning guidance [AD-A168136] p 98 N87-11630
- Bibliographic networks and microcomputer applications for aerospace and defense scientific and technical information p 98 N87-19823
- The use of portable microcomputer as a data collection tool to support integrated simulation support environments: A concept [AD-A196414] p 14 N88-11403
- Cumulative reports and publications through December 31, 1988 [NASA-CR-181784] p 16 N89-20619
- Electronic information delivery at the job site [DE89-009726] p 17 N89-27350
- U.S. Coast Guard Information Center plan [PB85-175644] p 17 N85-74028
- MICROFILMS**
- Computer-Output Microfiche (COM) on the Oak Ridge computer network [DE84-002422] p 92 N84-15836
- MICROMETEOROLOGY**
- Development of a micrometeorological and tracer data archive [PB87-110490] p 73 N87-19845
- MICROPROCESSORS**
- Assurance Program for Remedial Action (APRA) microcomputer-operated bibliography management system [DE85-008763] p 95 N86-16155
- Security concepts for microprocessor based key generator controllers [AD-A155194] p 111 N85-74089
- MILITARY OPERATIONS**
- An evaluation of two reliability and maintainability information systems [AD-A143438] p 58 N84-33290
- Automated Information Management Technology (AIM-TECH). Considerations for a technology investment strategy [AD-A161139] p 38 N86-20173
- Proceedings of the Workshop on AI (Artificial Intelligence), and Distributed Problem Solving [PB88-224852] p 44 N89-16400
- Information management expert systems p 87 N89-16407
- MILITARY SPACECRAFT**
- State-of-the-art in computer security for DoD space systems [AIAA PAPER 86-2778] p 107 A87-18864
- MILITARY TECHNOLOGY**
- Plots wary of tactical information systems p 62 A85-41058
- GPS/JTIDS compatibility -- Global Positioning System/Joint Tactical Information Distribution System p 63 A87-13537
- Common sense and practical experience prior to 2167 -- defense contracts involving software development [AIAA PAPER 88-3990] p 3 A89-18148
- Technology transfer at DARPA. The Defense Advanced Research Projects Agency Executive summary [AD-A164503] p 10 N86-27110
- MINERAL DEPOSITS**
- NASA pilot land data system p 68 N84-31741
- Federal Mineral Land Information System p 70 N85-35459
- MINERAL EXPLORATION**
- Federal Mineral Land Information System p 70 N85-35459
- MINES (EXCAVATIONS)**
- Federal Mineral Land Information System p 70 N85-35459
- MINICOMPUTERS**
- Integrated library system at ORNL LION [DE86-008867] p 97 N86-31448
- MISSION PLANNING**
- 1988 Goddard Conference on Space Applications of Artificial Intelligence, Greenbelt, MD, May 24, 1988. Proceedings p 44 N89-21801
- Integrated resource scheduling in a distributed scheduling environment -- for space stations p 80 A89-21808
- Space Station needs, attributes and architectural options, volume 2, book 3 Cost and programmatic [NASA-CR-173320] p 3 N84-18304
- Management of complex information in support of evolving autonomous expert systems [AD-A186680] p 39 N88-17337
- The 1989 Goddard Conference on Space Applications of Artificial Intelligence [NASA-CP-3033] p 45 N89-26578
- MODULES**
- Empirical user modeling - Command usage analyses for deriving models of users p 49 A88-35404
- The retrieval expert model of information retrieval p 37 N85-25003
- Design of graphic displays in computerized systems [AD-A161890] p 71 N86-24227
- Research and development of models and instruments to define, measure, and improve shared information processing within government oversight agencies [DE87-012473] p 12 N87-29371
- KREME (Knowledge Representation, Editing and Modeling Environment): A user's introduction, phase 1 [AD-A188906] p 39 N88-20052
- A shared-world conceptual model for integrating space station life sciences telepresence operations p 55 N88-30333
- Integrating distributed homogeneous and heterogeneous databases. Prototypes, volume 3 [AD-A195852] p 27 N89-10668
- Federal information resources management: Bridging vision and action p 15 N89-12488
- Software process modeling [AD-A197137] p 27 N89-13154
- MONITORS**
- A process activity monitor for AOS/VS [NASA-TM-86535] p 109 N86-19950
- A multiprocessing architecture for real-time monitoring p 29 N89-15597
- MOTIVATION**
- Man-machine systems of the 1990 decade: Cognitive factors and human interface issues [AD-A163865] p 52 N86-25123
- MOTOR VEHICLES**
- Risk assessment of compressed natural gas-fueled vehicle operations, phase 1 [PB89-188841] p 104 N89-27196
- MULTIPLEXING**
- Link performance data management and analysis system users manual [AD-A203605] p 88 N89-22356
- The trusted function in secure decentralized processing [AD-A155252] p 111 N85-74267
- MULTIPROCESSING (COMPUTERS)**
- Real-time knowledge-based monitoring of telemetry data p 34 A89-33685
- An evaluation methodology for dependable multiprocessors [AD-A192799] p 26 N88-26863
- Practical issues relating to the internal database predicates in an n-parallel prolog: Extensions and useful hacks [DE88-010019] p 27 N89-13174
- Design and implementation of a controller and a host simulator for a relational replicated database system [AD-A198951] p 28 N89-14176
- A multiprocessing architecture for real-time monitoring p 29 N89-15597
- Proceedings of the Workshop on AI (Artificial Intelligence), and Distributed Problem Solving [PB88-224852] p 44 N89-16400
- Resource contention management in parallel systems [AD-A206809] p 32 N89-28332
- MULTISENSOR APPLICATIONS**
- A Distributed Sensor Architecture for advanced aerospace systems p 34 A89-26960
- MULTISPECTRAL PHOTOGRAPHY**
- The Land Analysis System (LAS) - A general purpose system for multispectral image processing p 64 A87-53230
- N**
- NASA PROGRAMS**
- Protecting sensitive systems and data in an open agency [AIAA PAPER 87-3092] p 107 A88-26213
- NASA astrophysical data system (ADS) study p 81 A89-27239
- NASA Administrative Data Base Management Systems, 1983 [NASA-CP-2304] p 81 N84-21403
- NASA-wide standard administrative systems p 82 N84-21415
- Guidelines for developing NASA (National Aeronautics and Space Administration) ADP security risk management plans [NASA-CR-173564] p 108 N84-26317
- Guidelines for contingency planning NASA (National Aeronautics and Space Administration) ADP security risk reduction decision studies [PB84-189635] p 108 N84-30737
- NASA Administrative Data Base Management Systems, 1984 [NASA-CP-2323] p 82 N84-33268
- Management: A bibliography, for NASA managers [NASA-SP-7500(19)] p 83 N85-26439
- Management: A bibliography, for NASA managers (supplement 21) [NASA-SP-7500(21)] p 85 N87-20833
- Space operations: NASA's use of information technology. Report to the Chairman, Committee on Science, Space and Technology [GAO/IMTEC-87-20] p 11 N87-22551
- Computer technologies and institutional memory p 55 N89-20062
- Space data management at the NSSDC (National Space Sciences Data Center): Applications for data compression p 102 N89-22534
- The PAD is back p 17 N89-70432
- NASA SPACE PROGRAMS**
- Concepts for a global resources information system p 18 A86-20056
- NASA space information systems overview [AIAA PAPER 87-2189] p 63 A87-48577
- Scientific customer needs - NASA user [AIAA PAPER 87-2196] p 49 A87-48582
- The crisis in space and earth science: A time for a new commitment [NASA-TM-101290] p 17 N89-70676
- NATIONAL AIRSPACE SYSTEM**
- FANS - A U.S. perspective p 1 A87-11807
- NATURAL GAS**
- Risk assessment of compressed natural gas-fueled vehicle operations, phase 1 [PB89-188841] p 104 N89-27196
- NATURAL LANGUAGE (COMPUTERS)**
- Computer software for working with language p 46 A84-44371
- Research on interactive acquisition and use of knowledge [AD-A131306] p 35 N84-11823
- A natural language interface for a PROLOG database [AD-A138071] p 51 N84-22254
- Knowledge representation and natural language semantics [AD-A146025] p 37 N85-12815
- EPALIT: A data management system applied to the control and retrieval of technical reports [PB85-193068] p 94 N85-35828
- Automated Information Management Technology (AIM-TECH): Considerations for a technology investment strategy [AD-A161139] p 38 N86-20173
- Exploring lexical regularities in designing natural language systems [AD-A195922] p 40 N88-30375
- Concepts and implementations of natural language query systems [NASA-CR-184514] p 60 N89-14954
- Natural language query system design for interactive information storage and retrieval systems. Presentation visuals [NASA-CR-184526] p 87 N89-14986
- KARL: A Knowledge-Assisted Retrieval Language [NASA-CR-184529] p 43 N89-14969
- An intelligent user interface for browsing satellite data catalogs p 79 N89-26601
- Natural language processing and advanced information management p 88 N89-26602
- A multimedia database management system supporting contents search in media data [AD-A207070] p 103 N89-26780
- NAVY**
- Test and Evaluation Master Plan (TEMP) for the Navy Occupational Health Information Management System (NOHIMS) Phase 1 Appendix A through appendix U [AD-A154179] p 84 N85-30967
- Implementation of multimedia information systems at three Navy facilities [AD-A157797] p 84 N86-16153
- NETWORK ANALYSIS**
- Status of DOE information network modifications [DE89-005191] p 101 N89-20028
- NETWORK CONTROL**
- Interconnecting heterogeneous database management systems p 18 A84-41197
- High-level security for computer networking - SAC digital network approach p 18 A85-14486
- Advanced Information Processing System (AIPS) proof-of-concept system functional requirements I/O network system services [NASA-CR-181481] p 12 N88-12412

NETWORK SYNTHESIS

Project FIRST (Faculty Information and Research Service for Texas) technical description of project and results
[PB84-161629] p 67 N84-24501

NETWORKS

The Shared Bibliographic Input Network (SBIN): A summary of the experiment
[AD-A133001] p 104 N84-75065

NEURAL NETS

BIOMASSCOMP: Artificial neural networks and neurocomputers
[AD-A200902] p 44 N89-19123
The utilization of neural nets in populating an object-oriented database p 45 N89-26599

NEUROLOGY

Three-dimensional computer graphics brain-mapping project
[AD-A170553] p 41 N89-11435

NEWS MEDIA

Remote sensing and the First Amendment
p 113 A88-19830
Gathering news from space p 113 A88-19831

NUMERICAL ANALYSIS

Cumulative reports and publications through December 31, 1988
[NASA-CR-181784] p 16 N89-20619

NUMERICAL INTEGRATION

Reusing structured models via model integration
[AD-A204552] p 30 N89-22369

O

OBJECT PROGRAMS

Object-oriented approach to integrating database semantics, volume 4
[AD-A195853] p 41 N89-10672
The utilization of neural nets in populating an object-oriented database p 45 N89-26599

OCEANOGRAPHIC PARAMETERS

A system for management, display and analysis of oceanographic time series and hydrographic data
p 65 A89-12863

OCEANOGRAPHY

Data access for scientific problem solving
p 19 A88-20252
Satellite data management for effective data access
p 64 A88-38690

OFFICE AUTOMATION

Office automation: A look beyond word processing
[AD-A132764] p 36 N84-28670
A user view of office automation of the integrated workstation p 6 N84-33271
Towards an ideal database server for office automation environments
[AD-A148184] p 7 N85-17742
Efforts at office automation and information systems utilization at Martin Marietta Energy Systems, Incorporated
[D85-008154] p 8 N85-28633
The architectural requirements and integration analysis of a database server for office automation
[AD-A155517] p 8 N85-32825
Integration of office automation within computing
[DE85-010021] p 9 N85-33736
Office automation: The administrative window into the integrated DBMS
p 5 N86-15174
Development of a dBase III plus database for office automation within the Department of Logistics Management, School of Systems and Logistics
[AD-A202628] p 16 N89-22354

ON-LINE SYSTEMS

Cost considerations in database selection: A comparison of DIALOG and ESA/IRS
p 90 A84-45571
Idiot sheets: Preparing and using Database guide sheets
p 90 A85-24514
An intermediary's perspective of online data bases for local governments
p 90 A85-24549
"Meatball searching": The adversarial approach to online information retrieval
p 90 A86-40659
How an engineer acquires and uses information through the DIALOG system
[AIAA PAPER 89-0851] p 91 A89-25820
Compilation of cooperative data element dictionary of five federal agencies' systems for processing of technical report literature
[AD-A130797] p 92 N84-11059
The use and value of Defense Technical Information Center products and services
[AD-A130805] p 92 N84-11061
TIS: An intelligent gateway computer for information and modeling networks. Overview
[DE83-017986] p 20 N84-14067

The automated information retrieval system in the field of science and science Policy-AWION
[AD-A135565] p 66 N84-19174

NASA Administrative Data Base Management Systems, 1983
[NASA-CP-2304] p 81 N84-21402
Automated RTOP management system
p 82 N84-21406

Intercenter Problem Reporting and Corrective Action System (PRACAS)
p 3 N84-21408
Automated administrative data bases
p 82 N84-21411

Method for accessing distributed heterogeneous databases
p 67 N84-21412
NASA-wide standard administrative systems
p 82 N84-21415

Display units for online passage retrieval: A comparative analysis
[DE84-001004] p 92 N84-25369

Local automation model: System specification
[AD-A141503] p 92 N84-29798

Success with Data Management 4 at the DOE Pinellas Plant
[DE84-008021] p 82 N84-29802

The user's mental model of an information retrieval system. Effects on performance
p 51 N84-32275
NASA Administrative Data Base Management Systems, 1984
[NASA-CP-2323] p 82 N84-33266

Strategies for converting to a DBMS environment
p 5 N84-33267
The administrative window into the integrated DBMS
p 82 N84-33270

A user view of office automation of the integrated workstation
p 6 N84-33271
Maintenance Management: Information and Control System (MMICS). Administrative boon or burden
[AD-A145762] p 83 N85-12790

Retrieval performance in a full text journal article database
p 94 N85-27747
SAFEORD: Safety of explosive ordnance databank
[AD-A154058] p 70 N85-30972

A comparative study of OCLC, Inc. and the Washington Library Network in twenty-nine Pacific Northwest academic libraries
p 109 N86-15208

Examining learning theory of online information retrieval systems and applications in computer-aided instruction
Implications for the Defense Technical Information Center's computer-aided instruction
[AD-A159001] p 38 N86-15213

The DOD gateway information system
[AD-A161701] p 96 N86-21432

A design methodology for on-line menu-driven information retrieval systems
p 96 N86-24558
Modern hardware technologies and software techniques for on-line database storage and access
[AD-A164993] p 24 N86-26924

On-line interactive database for the storage and rapid information retrieval of gas industry data
[TI86-900895] p 96 N86-28792

Information services. Pros and cons
p 9 N86-28797
Measuring the value of information and information systems, services and products
p 97 N86-28799

Integrated library system at ORNL LION
[DE86-008867] p 97 N86-31448

Earth and environmental science in the 1980's: Part I
Environmental data systems, supercomputer facilities and networks
[NASA-CR-4029] p 24 N87-16381

Proceedings of the 2nd Conference on Computer Interfaces and Intermediaries for Information Retrieval
[AD-A174000] p 53 N87-16657

The DOD gateway information system directory of resources
[AD-A174154] p 25 N87-16658

Towards automated consulting: Design feedback from the performance of online documentation
[DE87-012243] p 99 N88-13082

Electronic data generation and display system
p 61 N89-19891
Conversion of mass storage hierarchy in an IBM computer network
[AD-A208520] p 31 N89-28330

Problems and solutions in online documentation systems
[DE89-014092] p 80 N89-28447

Computer aided retrieval of vital records
p 80 N88-70735

ONBOARD DATA PROCESSING

Software aspects of earth observation
[AIAA PAPER 89-0779] p 65 A89-28460

OPERATING SYSTEMS (COMPUTERS)

EXAMINE: An expert system to mediate human-computer dialogs
p 4 N86-23740

Integrity mechanisms in a secure UNIX - Gould UTX/32S
[AIAA PAPER 86-2761] p 105 A87-16854

The evaluation and extension of TAE in the development of a user interface management system
p 53 N87-23158

Fastbus standard routines
[DOE/ER-0367] p 29 N89-20645

The computational structural mechanics tested architecture Volume 2 Directives
[NASA-CR-178385] p 78 N89-22133

An architecture for heuristic control of real-time processes
p 57 N89-26470

Performance of a data base management system with partially locked virtual buffers
[NASA-CR-185729] p 90 N89-71336

OPERATOR PERFORMANCE

An architecture for intelligent interfaces: Outline of an approach to supporting operators of complex systems
p 48 A87-16818

Effects of display proximity and memory demands on the understanding of dynamic multidimensional information
p 48 A87-33044

Memory and subjective workload assessment
p 52 N86-32983
SARSCST (human factors)
p 55 N89-19890

Use of artificial intelligence in supervisory control
p 44 N89-20694

Intent inferring with a model-based operator's associate
[REPT-88-2] p 56 N89-20695

OFMTutor: An operator function model intelligent tutoring system
p 56 N89-20696

OPERATORS (PERSONNEL)

Empirical user modeling: Command usage analyses for deriving models of users
p 49 A88-35404

Optimal combination of information from multiple sources, part 3
[AD-A174726] p 59 N87-19913

OPTICAL DATA PROCESSING

Optical Information Processing for Aerospace Applications 2
[NASA-CP-2302] p 67 N84-22402

OPTICAL DATA STORAGE MATERIALS

Modern hardware technologies and software techniques for on-line database storage and access
[AD-A164993] p 24 N86-26924

OPTICAL MEMORY (DATA STORAGE)

Optical laser technology, specifically CD-ROM (Compact Disc - Read Only Memory) and its application to the storage and retrieval of information
[AD-A184111] p 74 N88-12046

CD-ROM (Compact Disc Read Only Memory) library of the future
[AD-A197943] p 100 N89-14702

OPTICAL SCANNERS

A contextual postprocessing expert system for English sentence reading machines
[AD-A163951] p 96 N86-26026

Application of new technologies to DTIC document processing
[AD-A189778] p 99 N88-22823

OPTIMIZATION

Strategy and optimization in human information processing
p 48 A87-33502

Logical optimization for database normalization
[NASA-CR-173836] p 5 N84-32282

A structural optimization method for information resource management
[AD-A166420] p 59 N86-29722

Optimal combination of information from multiple sources, part 5
[AD-A174726] p 59 N87-19913

On query processing in distributed database systems
p 61 N89-15774

Structured requirements determination for information resources management
[AD-A204764] p 62 N89-22532

A large scale software system for simulation and design optimization of mechanical systems
p 30 N89-25219

ORDNANCE

SAFEORD: Safety of explosive ordnance databank
[AD-A154058] p 70 N85-30972

ORGANIZATIONS

The flow of scientific and technical information in the US Army Research Laboratories
[AD-A155050] p 9 N85-33043

Organization as information processing systems. Toward a model of the research factors associated with significant research outcomes
[AD-A168018] p 10 N86-33200

Organizations as information processing systems. Environmental characteristics, company performance and chief executive scanning, an empirical study
[AD-A168035] p 10 N86-33201

- Strategic, organizational and standardization aspects of integrated information systems, volume 6
[AD-A195855] p 14 N88-30457
- Decision-oriented strategic planning for information systems: Applying conceptual models of crisis decision-making to strategic planning for crisis management decision support systems p 15 N89-12486
- Computer technologies and institutional memory p 55 N89-20062
- Emerging issues on managing information resources p 17 N85-70762
- ORGANIZING**
- Navy information systems Planning, policy, organization, and management [PB85-176113] p 8 N85-32038
- OUTER SPACE TREATY**
- Colloquium on the Law of Outer Space, 27th, Lausanne, Switzerland, October 7-13, 1984, Proceedings p 112 A85-29025
- Maintaining outer space for peaceful purposes through international cooperation p 2 A89-12104

P

- PACIFIC OCEAN**
- Archiving and exchange of a computerized marine seismic database The ROSE data archive system [DE84-901453] p 69 N85-13677
- PANEL METHOD (FLUID DYNAMICS)**
- Development and validation of an advanced low-order panel method [NASA-TM-101024] p 75 N89-12554
- PAPERS**
- Bibliographic coupling among scientific papers in biological research specialties p 103 N89-25771
- PARALLEL PROCESSING (COMPUTERS)**
- Inductive information retrieval using parallel distributed computation [AD-A142712] p 36 N84-31050
- Intelligent information retrieval from on-line technical documentation [AD-P003946] p 37 N85-11626
- Future database machine architectures [AD-A146786] p 22 N85-16481
- Data Base Management: Proceedings of a conference [AD-A158285] p 85 N86-25999
- Practical issues relating to the internal database predicates in an OR-parallel prog. Extensions and useful hacks [DE88-010019] p 27 N89-13174
- Design and implementation of a controller and a host simulator for a relational replicated database system [AD-A198951] p 28 N89-14176
- Distributing program entities in Ada p 29 N89-16295
- Implementation of a hypercube database system [DE89-010474] p 88 N89-26413
- Resource contention management in parallel systems [AD-A208809] p 32 N89-28332
- Allocation strategies for APL on the ChiP (configurable highly parallel) computer [AD-A203761] p 32 N89-70704
- PARALLEL PROGRAMMING**
- Inductive information retrieval using parallel distributed computation [AD-A142712] p 36 N84-31050
- PARSING ALGORITHMS**
- Research on interactive acquisition and use of knowledge [AD-A137436] p 36 N84-20270
- PARTICLE ACCELERATORS**
- The AGS Booster control system [DE88-013990] p 28 N89-14068
- PATTERN RECOGNITION**
- The advantages of abstract control knowledge in expert system design [AD-A139978] p 36 N84-25370
- Applying expertise to data in the Geologist's Assistant expert system [DE89-003463] p 44 N89-20574
- PERCEPTION**
- Interactive activation models of perception and comprehension [AD-A161362] p 52 N86-21143
- PERFORMANCE TESTS**
- ELEFUNT test results under FORTRAN-PLUS on the active memory technology DAP 510-8 [DE88-017264] p 28 N89-14700
- PERSONAL COMPUTERS**
- A user view of office automation or the integrated workstation p 6 N84-33271
- A user's guide for the BIBSORT program for the IBM-PC personal computer [AD-A157936] p 94 N86-12995

- Integration of communications with the Intelligent Gateway Processor [DE87-002386] p 25 N87-19961
- Guide to sharing personal computer resources via local area networks, revised [DE86-016088] p 25 N87-20772
- The design of PC/MiSi, a PC-based common user interface to remote information storage and retrieval systems [NASA-CR-184523] p 55 N89-14963
- The design of PC/MiSi, a PC-based common user interface to remote information storage and retrieval systems. Presentation visuals [NASA-CR-184524] p 55 N89-14964
- An overview of the USL/DBMS NASA/PC R and D project working paper series [NASA-CR-184533] p 15 N89-14973
- General specifications for the development of a USL/DBMS NASA/PC R and D distributed workstation [NASA-CR-184538] p 15 N89-14978
- The IBM PC at NASA Ames p 16 N89-18392
- GRAPS (Graphical Plotting System) user's guide A graphical plotting system for displaying scientific and engineering data [AD-A202583] p 77 N89-21559
- PERSONALITY**
- Influences on group productivity 2 Factors inherent in the person A bibliographic synopsis [AD-A131015] p 50 N84-15790
- PERSONNEL**
- Maintenance Management Information and Control System (MMICS). Administrative boon or burden [AD-A145762] p 83 N85-12790
- Implementation of multifunction information systems at three Navy facilities [AD-A157797] p 84 N86-16153
- Design and implementation of a personnel database [AD-A159388] p 70 N86-16917
- Development of a computer-managed readiness assessment system [AD-A162931] p 71 N86-24215
- Computer technologies and institutional memory p 55 N89-20062
- Information Management in the Department of Defense The role of libraries [AD-A130345] p 80 N85-70560
- PERSONNEL DEVELOPMENT**
- Prototype development of an information-sharing and decision support system for the manpower personnel and training community [AD-P003310] p 68 N84-28451
- Keeping the nation's secrets. A report to the Secretary of Defense by the Commission to Review DoD Security Policies and Practices [AD-A161998] p 110 N86-24562
- PERSONNEL MANAGEMENT**
- Management and the executive [AD-A190778] p 86 N88-25374
- Evaluating the performance of information centre staff p 14 N89-11629
- Evaluating performance of information centre operations and services p 14 N89-11630
- A framework for evaluating the effectiveness of information centres and services p 14 N89-11631
- Design considerations for human-computer dialogues [AD-A159265] p 57 N86-70447
- PETROLEUM PRODUCTS**
- Improving the defense energy information system (DEIS) [AD-A153524] p 84 N85-29849
- PILOT ERROR**
- Aeronautical decision making Cockpit resource management [AD-A205115] p 61 N89-22327
- PILOT PERFORMANCE**
- An advanced media interface for control of modern transport aircraft navigational systems [AIAA PAPER 84-2686] p 46 A85-17865
- Plots wary of tactical information systems p 62 A85-41058
- Subjective workload and individual differences in information processing abilities [SAE PAPER 841491] p 47 A86-26011
- A pilot's view of intelligent systems p 50 A89-45294
- Aeronautical decision making Cockpit resource management [AD-A205115] p 61 N89-22327
- PILOTS (PERSONNEL)**
- Automated Information Management Technology (AIM-TECH) Considerations for a technology investment strategy [AD-A161139] p 38 N86-20173

PLANETARY LANDING

- The specification and design of a system using computer-aided software engineering and performance analysis tools [AIAA PAPER 88-4410] p 19 A88-51834
- PLANNING**
- Navy information systems. Planning, policy, organization, and management [PB85-176113] p 8 N85-32038
- Air Force Geophysics Laboratory management information system study [AD-A161910] p 85 N86-24561
- Information technology resources long-range plan, FY 1987-FY 1991 [DE86-010457] p 11 N86-33206
- Elements of a proposed security methodology for networks of computers [DE87-006769] p 110 N87-23152
- Strategic planning process at the National Technical Information Service p 12 N87-26580
- Management and the executive [AD-A190778] p 86 N88-25374
- Evaluating for information center planning p 15 N89-11632
- Planner system for the application of indications and warning p 42 N89-13188
- Shared resource control between human and computer p 57 N89-26580
- PLOTTING**
- A data viewer for multivariate data p 28 N89-13921
- GRAPS (Graphical Plotting System) user's guide A graphical plotting system for displaying scientific and engineering data [AD-A202583] p 77 N89-21559
- POLAR ORBITS**
- The EOS data and information system - Concepts for design p 65 A89-31939
- POLICIES**
- Remote sensing and the First Amendment p 113 A88-19630
- International space plans and policies - Future roles of international organizations [IAF PAPER 88-622] p 113 A89-17871
- U.S. government policies and hypersonic flight in the 21st century p 3 A89-41654
- Policy implications of information technology [PB84-183219] p 5 N84-31060
- Notes for medical catalogers, 1983 [PB84-195874] p 6 N84-33296
- Legal considerations and cooperative opportunities for space commercial activities p 113 N85-11013
- Navy information systems Planning, policy, organization, and management [PB85-176113] p 8 N85-32038
- Telecommunications alternatives for federal users Market trends and decisionmaking criteria [PB86-153764] p 23 N86-25687
- Public laws of the 98th Congress relating to information policy [CRS-TK-7885-F] p 114 N86-27130
- Freedom of Information Act Noncompliance with affirmative disclosure provisions [AD-A168589] p 10 N86-33204
- Defending secrets, sharing data New locks and keys for electronic information [PB88-143185] p 111 N88-20210
- International Space Policy for the 1990's and Beyond, no 86 [GPO-82-156] p 114 N89-12496
- United States space policy: Review and assessment [DE88-015538] p 115 N89-13306
- National space policy [AD-A202644] p 16 N89-21711
- Fostering interaction of government, defense, and aerospace databases p 103 N89-23374
- Emerging issues on managing information resources p 17 N85-70762
- Centers for analysis of scientific and technical information regulation [PB88-174315] p 104 N86-72104
- Allocation strategies for APL on the ChiP (configurable highly parallel) computer [AD-A203761] p 32 N89-70704
- PORTABLE EQUIPMENT**
- Toward highly portable database systems Issues and solutions [AD-A174635] p 11 N87-20131
- The use of portable microcomputer as a data collection tool to support integrated simulation support environments A concept [AD-A196414] p 14 N89-11403
- SARSCEST (human factors) p 55 N89-19890
- POTENTIAL FLOW**
- Development and validation of an advanced low-order panel method [NASA-TM-101024] p 75 N89-12554

PRECIPITATION (CHEMISTRY)

Data management of a multilaboratory field program using distributed processing
[DE86-014770] p 73 N87-18465

PRECIPITATION (METEOROLOGY)

Data management of a multilaboratory field program using distributed processing
[DE86-014770] p 73 N87-18465

PRESIDENTIAL REPORTS

A decade of accomplishment
[ISSN-0091-2972] p 93 N84-33283

PRINTING

A computer-based specification methodology
p 101 N89-18301

PRIVACY

Information systems, security and privacy
[RAND/P-6930] p 107 N84-21402
Computer resource management technology program (PE 64740F). Task no. 9: Advanced user authentication
[PB88-183066] p 111 N88-25163

PROBABILITY THEORY

Potential uses of probabilistic risk assessment techniques for space station development
p 104 A85-42595
Subjective probability, combination of expert opinion and probabilistic approaches to information retrieval
p 74 N88-13085
Computer Science and Statistics. Proceedings of the 18th Symposium on the Interface
[AD-A191296] p 28 N89-13901

PROBLEM SOLVING

Data access for scientific problem solving
p 19 A88-20252
A model for graphics interface to development
p 70 N85-34545
Automated Information Management Technology (AIM-TECH). Considerations for a technology investment strategy
[AD-A181139] p 38 N86-20173
Federal information systems management: Problems, solutions and more problems
[AD-A171366] p 11 N87-13353
Distributed knowledge base systems for diagnosis and information retrieval
[AD-A170830] p 38 N87-15025
Problem solving as intelligent retrieval from distributed knowledge sources
p 39 N88-16392
A personalized and prescriptive decision aid for choice from a database of options
[AD-A188726] p 59 N88-20820
Planner system for the application of indications and warning
p 42 N89-13188
Proceedings of the Workshop on AI (Artificial Intelligence), and Distributed Problem Solving
[PB88-224852] p 44 N89-18400
On designing a case-based system for expert process development
p 45 N89-24847
Egyptian National System for Scientific and Technical Information. Design study
[PB84-179423] p 80 N84-75267

PROCEDURES

Information retrieval strategies in a file-search environment
p 90 A84-44092
Notes for medical catalogers, 1983
[PB84-195874] p 6 N84-33296
On designing a case-based system for expert process development
p 45 N89-24847

PROCUREMENT

Information search in judgment tasks: The effects of unequal cue validity and cost
[AD-A141712] p 5 N84-29437
PROMIS (Procurement Management Information System)
[NASA-CR-179395] p 87 N89-14933

PROCUREMENT MANAGEMENT

Information search in judgment tasks: The effects of unequal cue validity and cost
[AD-A141712] p 5 N84-29437
Five-year plan for meeting the automatic data processing and telecommunications needs of the Federal Government. Volume 2: Major information technology systems acquisition plans of Federal executive agencies, 1984-1989
[PB84-214519] p 21 N85-12778
PRODUCTIVITY
Influences on group productivity: 2 Factors inherent in the person. A bibliographic synopsis
[AD-A131015] p 50 N84-15790
NASA-wide standard administrative systems
p 82 N84-21415
Electronic information management and productivity
[DE85-013662] p 9 N85-35818
Technical and management information system: The tool for professional productivity on the space station program
p 84 N86-15171

The success or failure of management information systems: A theoretical approach
[DE87-007802] p 85 N87-24233
Research and development of models and instruments to define, measure, and improve shared information processing within government oversight agencies
[DE87-012473] p 12 N87-29371
Implementing and managing change: A guide for assessing information technology
[DE88-000035] p 12 N88-11571
A framework for evaluating the effectiveness of information centres and services
p 14 N89-11631

PROGRAM VERIFICATION (COMPUTERS)

NASA guidelines for assuring the adequacy and appropriateness of security safeguards in sensitive applications
[NASA-CR-175489] p 109 N85-28593
GSA automated information security
[PMS-P-2100.1-CHGE-1] p 111 N85-72106
Security concepts for microprocessor based key generator controllers
[AD-A155194] p 111 N85-74069

PROGRAMMING LANGUAGES

Information information networks for material properties: Revision 1
[DE85-007412] p 22 N85-27572
DoD Gateway Information System (DGIS) common command language: The first prototyping and the decision for artificial intelligence
[AD-A185950] p 39 N88-15725
Object-oriented approach to integrating database semantics, volume 4
[AD-A195853] p 41 N89-10672
The computational structural mechanics testbed architecture, Volume 2: Directives
[NASA-CR-178385] p 78 N88-22133
Compiling high level constructs to distributed memory architectures
[NASA-CR-181825] p 30 N89-24058
Functional description and formal specification of a generic gateway
[AD-A206581] p 31 N89-26776
An asynchronous interface between a natural language query interpreter and a database management system
[AD-A206918] p 57 N89-26779
An implementation of a data definition facility for the graphics language for database
[AD-A207380] p 89 N88-28442
Allocation strategies for APL on the Chip (configurable highly parallel) computer
[AD-A203781] p 32 N89-70704

PROJECT MANAGEMENT

Artificial intelligence - New tools for aerospace project managers
p 32 A86-34986
Space Station needs, attributes and architectural options, volume 2, book 3: Cost and programmatic
[NASA-CR-173320] p 3 N84-18304
Requirements analysis for forward funding tracking system, volume 1
[AD-A136840] p 81 N84-20425
Action Information Management System (AIMS): A user's view
p 82 N84-21405
Guideline for computer security certification and accreditation, Category: ADP (Automatic Data Processing) operations. Subcategory: Computer security. Federal information processing standards
[FIPS-PUB-102] p 108 N84-30736
Administrative automation in a scientific environment
p 82 N84-33269
DTIC 2000: A corporate plan for the future
[AD-A143900] p 6 N84-34327
Technical and management information system: The tool for professional productivity on the space station program
p 84 N86-15171
Assurance Program for Remedial Action (APRA) microcomputer-operated bibliography management system
[DE85-008763] p 85 N86-16155
DOD (Department of Defense) Procedures for Management of Information Requirements
[PB87-155495] p 12 N87-24227
Deep space network resource scheduling approach and application
p 86 N89-10070
Life cycle management handbook
[DE89-004315] p 15 N89-17545
Information technology resources long-range plan: FY90 to FY94
[DE89-007784] p 16 N89-22527
The PAD is back
p 17 N89-70432
Controlling resources in the Apollo program
p 17 N89-70436
The crisis in space and earth science: A time for a new commitment
[NASA-TM-101290] p 17 N89-70676

PROJECT PLANNING

INFORM system 2-year plan, FY 1984-1985
[DE84-018044] p 7 N85-13674
Critical issues in NASA information systems
[NASA-CR-182380] p 13 N88-18577
The Engineer Studies Center guide to research and data collection
[AD-A189971] p 13 N88-23880
Controlling resources in the Apollo program
p 17 N89-70436
The crisis in space and earth science: A time for a new commitment
[NASA-TM-101290] p 17 N89-70676

PROLOG (PROGRAMMING LANGUAGE)

A natural language interface for a PROLOG database
[AD-A138071] p 51 N84-22254
OOD Gateway Information System (DGIS) common command language: Prolog knowledge base profile. Common command language report no. 3
[AD-A186150] p 99 N88-18574
The DoD Gateway Information System (DGIS): The development toward artificial intelligence and hypermedia in common command language
[AD-A203674] p 102 N89-20869

PROTECTION

Department of defense trusted computer system evaluation criteria
[AD-A141304] p 108 N84-28498

PROTOCOL (COMPUTERS)

Protocol interoperability between DDN and ISO (Defense Data Network and International Organization for Standardization) protocols
[AD-A206582] p 31 N89-26777

PROTON BEAMS

The AGS Booster control system
[DE88-013990] p 28 N89-14068

PROTOTYPES

The DoD gateway information system. Prototype experience
[AD-A186200] p 97 N86-30570
The development of a prototype intelligent user interface subsystem for NASA's scientific database systems
[NASA-TM-87821] p 53 N87-24098
Towards a tribology information system. The results of a Planning Workshop held at the National Bureau of Standards, July-August 1985
[PB88-168604] p 26 N88-21448
Experiences with a data analysis management prototype
p 60 N89-13918
A program interface prototype for a multimedia database incorporating images
[AD-A206439] p 45 N89-24226

PROVING

Computer resource management technology program (PE 64740F) Task no. 9: Advanced user authentication
[PB88-183066] p 111 N88-25163

PSYCHOLOGICAL FACTORS

Subjective workload and individual differences in information processing abilities
[SAE PAPER 841491] p 47 A86-26011

PSYCHOLOGY

Evaluation of the National Library of Medicine's programs in the medical behavior sciences. Online searchers' reactions to database and vendor capabilities in the Medical Behavioral Sciences (MBS), study 4
[PB84-230523] p 93 N85-12798

PUBLIC LAW

Paperwork Reduction Act amendments of 1983
[H-REPT-96-147] p 3 N84-11989
Paperwork Reduction Act of 1980
[S-REPT-96-479] p 4 N84-24504
Public laws of the 98th Congress relating to information policy
[CRS-TK-7885-F] p 114 N86-27130

Q**QUALITATIVE ANALYSIS**

A structural optimization method for information resource management
[AD-A186420] p 59 N86-29722

QUALITY CONTROL

Intercenter Problem Reporting and Corrective Action System (PRACAS)
p 3 N84-21408
Hanford meteorological station computer codes: Volume 9: The quality assurance computer codes
[DE89-008414] p 78 N89-22295

QUANTITATIVE ANALYSIS

A structural optimization method for information resource management
[AD-A186420] p 59 N86-29722

QUERY LANGUAGES

Concepts and implementations of natural language query systems
[NASA-CR-184514] p 60 N89-14954

- Natural language query system design for interactive information storage and retrieval systems. Presentation visuals
[NASA-CR-184528] p 87 N89-14966
- KARL: A Knowledge-Assisted Retrieval Language
[NASA-CR-184529] p 43 N89-14969
- On query processing in distributed database systems
p 81 N89-15774
- Monotonically improving approximate answers to relational algebra queries
[NASA-CR-184874] p 61 N89-20717
- QUEUEING THEORY**
The architectural requirements and integration analysis of a database server for office automation
[ADA-155517] p 8 N85-32825

R

- RADAR IMAGERY**
The Remote Atmospheric Probing Information Display (RAPID) system
[ADA-196314] p 75 N89-10500
- RADAR TARGETS**
LORAN C Offshore Flight Following (LOFF) in the Gulf of Mexico
[ADA-197179] p 75 N89-12558
- RAIN**
The Remote Atmospheric Probing Information Display (RAPID) system
[ADA-196314] p 75 N89-10500
- RANDOM ACCESS MEMORY**
An assessment of CD ROM (Compact Disk Read Only Memory)
[ADA-169259] p 72 N87-11492
- READ-ONLY MEMORY DEVICES**
An assessment of CD ROM (Compact Disk Read Only Memory)
[ADA-169259] p 72 N87-11492
- On user technology, specifically CD-ROM (Compact Disc Read Only Memory) and its application to the storage and retrieval of information
[ADA-184111] p 74 N88-12086
- CD-ROM (Compact Disc Read Only Memory) library of the future
[ADA-197943] p 100 N89-14702
- READERS**
A contextual postprocessing expert system for English sentence reading machines
[ADA-163951] p 96 N86-26026
- READING**
The function of report components in the screening and reading of technical reports
p 90 A84-45547
- The role of working memory in language comprehension
[AD-A192721] p 54 N88-26805
- REAL TIME OPERATION**
The man-machine interface in computerized telemetry systems
p 46 A84-32429
- Real-time knowledge-based monitoring of telemetry data
p 34 A89-33685
- Acquisition, use and archiving of real-time data
[DE86-014769] p 25 N87-18282
- Toward highly portable database systems: Issues and solutions
[ADA-174635] p 11 N87-20131
- A multiprocessing architecture for real-time monitoring
p 29 N89-15597
- Global updates in integration of distributed databases
p 29 N89-15773
- An architecture for heuristic control of real-time processes
p 57 N89-26470
- RECOGNITION**
Content-Addressable Memory manager: Design and evaluation
[AD-A164037] p 23 N86-25133
- Memory and subjective workload assessment
p 52 N86-32983
- RECORDS**
Paperwork Reduction Act of 1980
[S-REPT-98-479] p 4 N84-24504
- Records Disposal: A guidebook for laboratory offices
[AD-A156064] p 9 N85-35823
- Electronic Records Administration at the Savannah River Plant
[DE87-014842] p 12 N88-12415
- REDUCED GRAVITY**
An expert system based intelligent control scheme for space bioreactors
p 44 N89-20285
- REGENERATION (ENGINEERING)**
Local resource utilization and integration into advanced mission's LSS
[SAE PAPER 881053] p 65 A89-27851

- REGRESSION ANALYSIS**
Planning and controlling the acquisition costs of Air Force information systems
[AD-A204421] p 16 N89-22528
- REGULATIONS**
International space law norms regulating remote sensing of the earth from outer space
p 113 A89-12126
- White paper on new international satellite systems
[PB85-162501] p 8 N85-27127
- Telecommunications alternatives for federal users. Market trends and decisionmaking criteria
[PB86-153764] p 23 N88-25687
- Freedom of Information Act. Noncompliance with affirmative disclosure provisions
[AD-A168589] p 10 N86-33204
- Centers for analysis of scientific and technical information regulation
[PB86-74315] p 104 N88-72104
- RELIABILITY**
An evaluation of two reliability and maintainability information systems
[AD-A143438] p 58 N84-33290
- An evaluation methodology for dependable multiprocessors
[AD-A192799] p 26 N88-26863
- Space station Ada runtime support for nested atomic transactions
p 77 N89-16375
- An experimental investigation into software reliability
[AD-A206293] p 30 N89-24069
- RELIABILITY ANALYSIS**
Potential uses of probabilistic risk assessment techniques for space station development
p 104 A85-42595
- RELIABILITY ENGINEERING**
Intercenter Problem Reporting and Corrective Action System (PRACAS)
p 3 N84-21401
- REMOTE HANDLING**
The design of PC/MISI, a PC-based common user interface to remote information storage and retrieval systems
[NASA-CR-184523] p 55 N89-14963
- The design of PC/MISI, a PC-based common user interface to remote information storage and retrieval systems. Presentation visuals
[NASA-CR-184524] p 55 N89-14964
- REMOTE SENSING**
The Land Analysis System (LAS): A general purpose system for multispectral image processing
p 64 A87-53230
- A proposed Applications Information System: Concept, implementation, and growth
[IAF PAPER 87-156] p 64 A88-15906
- Remote sensing and the First Amendment
p 113 A88-19830
- Gathering news from space
p 113 A88-19831
- Applications of multispectral video for natural resource assessment
p 65 A89-10968
- International space law norms regulating remote sensing of the earth from outer space
p 113 A89-12126
- Legal problems posed by the commercialization of data collected by the European Remote Sensing Satellite ERS-1
p 113 A89-33030
- Concept for a satellite-based global reserve monitoring system
p 66 A89-41152
- The Pilot Land Data System: Report of the Program Planning Workshops
[NASA-TM-86250] p 67 N84-26468
- International banking of satellite and in-situ wave data by the Marine Information and Advisory Services (MIAS)
p 69 N85-12434
- Remote Sensing Information Sciences Research Group, Santa Barbara Information Sciences Research Group, year 3
[NASA-CR-179769] p 72 N86-32863
- Technology transfer for development of coastal zone resources. Caribbean experts examine critical issues
p 77 N89-18749
- Bangladesh Agro-Climatic Environmental Monitoring Project
p 79 N89-28121
- REPORT GENERATORS**
Electronic data generation and display system
p 61 N89-19891
- REPORTS**
The function of report components in the screening and reading of technical reports
p 90 A84-45547
- National Archives and Records Service (NARS) twenty year preservation plan
[PB85-177640] p 84 N85-29854
- DOD (Department of Defense) Procedures for Management of Information Requirements
[PB87-155495] p 12 N87-24227
- Technical report literature in chemistry and engineering
Bibliometric and content analysis
p 102 N89-22525

REQUIREMENTS

- Design of a scientific information collation and dissemination system, volumes 1 thru 3
[AD-A146002] p 69 N85-12791
- Advanced Information Processing System (AIPS) proof-of-concept system functional requirements I/O network system services
[NASA-CR-181481] p 12 N88-12412
- Monitoring the usage of a computer system
[DE88-004310] p 111 N88-22542
- Structured requirements determination for information resource management
[AD-A204764] p 62 N89-22532
- The PAD is back
p 17 N89-70432
- RESEARCH**
The flow of scientific and technical information in the US Army Research Laboratories
[AD-A155050] p 9 N85-33043
- The impact of information technology on research in science and engineering
[DE88-000342] p 13 N88-12417
- The Engineer Studies Center guide to research and data collection
[AD-A189971] p 13 N88-23680
- RESEARCH AND DEVELOPMENT**
Technical and Management Information System (TMIS)
[AIAA PAPER 87-2217] p 64 A87-48600
- Characteristics of R&D management which influence information needs
p 2 A88-10402
- Technology transfer at OARPA: The Defense Advanced Research Projects Agency, Executive summary
[AD-A164503] p 10 N86-27110
- The costs of not having refined information
p 59 N86-28798
- Integrated library system at ORNL: LION
[DE86-008867] p 97 N86-31448
- Analysis of the use of Defense Technical Information Center resources by research and development centers and laboratories in the US Army
[AD-A168441] p 97 N86-33203
- Materials Information for Science and Technology (MIST). Project overview: Phase 1 and 2 and general considerations
[OE87-006799] p 73 N87-23312
- Benefits of scientific and technical information services for aerospace and defense
p 98 N87-26677
- Strategic planning process at the National Technical Information Service
p 12 N87-26680
- Overview of the NASA/RECON educational, research, and development activities of the Computer Science Departments of the University of Southwestern Louisiana and Southern University
[NASA-CR-184509] p 100 N89-14949
- Research and development strategy for high performance computing
[PB89-120778] p 62 N89-70498
- RESEARCH FACILITIES**
The flow of scientific and technical information in the US Army Research Laboratories
[AD-A155050] p 9 N85-33043
- Laboratory Information Management System (LIMS): A case study
[NASA-TM-100835] p 26 N88-21697
- Relevance of international research facilities to international stability
[OE89-009400] p 103 N89-23380
- RESEARCH MANAGEMENT**
Characteristics of R&D management which influence information needs
p 2 A88-10402
- Air Force Geophysics Laboratory management information system study
[AD-A161910] p 85 N86-24561
- Organization as information processing systems: Toward a model of the research factors associated with significant research outcomes
[AD-A168018] p 10 N86-33200
- Computer-aided research
[OE88-007771] p 54 N88-26114
- A systematic approach to human factors measurement
[AD-A132423] p 57 N84-71658
- The crisis in space and earth science: A time for a new commitment
[NASA-TM-101290] p 17 N89-70676
- RESOURCES**
The OOO gateway information system directory of resources
[AD-A174154] p 25 N87-16658
- RESOURCES MANAGEMENT**
The potentials and challenges afforded by SPOT-1 data
p 65 A89-10945
- Applications of multispectral video for natural resource assessment
p 65 A89-10968

Local resource utilization and integration into advanced mission's LSS [SAE PAPER 881053] p 65 A89-27851

Beyond the data base Technology for information resource management [AD-A138840] p 4 N84-23402

Federal Mineral Land Information System p 70 N85-35459

Keeping the nation's secrets A report to the Secretary of Defense by the Commission to Review DoD Security Policies and Practices [AD-A161998] p 110 N86-24562

A structural optimization method for information resource management [AD-A166420] p 59 N86-29722

Federal government information technology: Management, security and congressional oversight [PB86-205499] p 110 N87-12397

DTIC (Defense Technical Information Center) model action plan for incorporating DGIS (DOD Gateway Information System) capabilities [AD-A181102] p 98 N87-27551

Air Force geographic information and analysis system [DE88-001420] p 74 N88-18505

Space station Platform Management System (PMS) replanning using resource envelopes p 86 N89-10071

Automation of spacecraft control centers p 86 N89-10078

Federal information resources management: Bridging vision and action p 15 N89-12488

Information resource management: An architectural concept/experience [DE88-015184] p 86 N89-14177

Technology transfer for development of coastal zone resources Caribbean experts examine critical issues p 77 N89-18749

BIOMASSCOMP: Artificial neural networks and neurocomputers [AD-A200902] p 44 N89-19123

Integrating syntax, semantics, and discourse DARPA (Defense Advanced Research Projects Agency) natural language understanding program [AD-A203747] p 101 N89-20677

Aeronautical decision making Cockpit resource management [AD-A205115] p 61 N89-22327

Structured requirements determination for information resources management [AD-A204764] p 62 N89-22532

Information resources management p 17 N89-23371

Fostering interaction of government, defense, and aerospace databases p 103 N89-23374

Shared resource control between human and computer p 57 N89-26580

Controlling resources in the Apollo program p 17 N89-70436

The crisis in space and earth science A time for a new commitment [NASA-TM-101290] p 17 N89-70676

RETIREMENT

Computer technologies and institutional memory p 55 N89-20062

RISK

Potential uses of probabilistic risk assessment techniques for space station development p 104 A85-42595

Guidelines for developing NASA (National Aeronautics and Space Administration) ADP security risk management plans [NASA-CR-173564] p 108 N84-26317

Guidelines for development of NASA (National Aeronautics and Space Administration) computer security training programs [NASA-CR-173562] p 108 N84-26318

Guidelines for contingency planning NASA (National Aeronautics and Space Administration) ADP security risk reduction decision studies [PB84-189836] p 108 N84-30737

Technology assessment: Methods for measuring the level of computer security [PB86-129954] p 110 N86-25140

Livermore risk analysis methodology A qualitative approach to management of the risk associated with the operation of information systems [DE87-008828] p 110 N87-24232

Risk assessment of compressed natural gas-fueled vehicle operations, phase 1 [PB89-188841] p 104 N89-27196

ROBOTICS

Intelligent interfaces for human control of advanced automation and smart systems p 47 A86-21889

Advanced data management design for autonomous tele robotic systems in space using spaceborne symbolic processors p 41 N89-10096

Planning actions in robot automated operations p 43 N89-15559

SARSCEST (human factors) p 55 N89-19890

ROTARY WINGS

TRUSS An intelligent design system for aircraft wings p 79 N89-25162

RUN TIME (COMPUTERS)

A process activity monitor for AOS/VIS [NASA-TM-86535] p 109 N86-19950

Space station Ada runtime support for nested atomic transactions p 77 N89-16375

S

SAFETY

SAFEORD Safety of explosive ordnance databank [AD-A154058] p 70 N85-30972

Risk assessment of compressed natural gas-fueled vehicle operations, phase 1 [PB89-188841] p 104 N89-27196

SAFETY MANAGEMENT

Assurance Program for Remedial Action (APRA) microcomputer-operated bibliography management system [DE85-008763] p 95 N86-16155

SATELLITE ATTITUDE CONTROL

An approach to autonomous attitude control for spacecraft [AAS PAPER 88-004] p 33 A89-20833

SATELLITE COMMUNICATION

Satellite information systems --- Book p 19 A88-55015

SATELLITE GROUND SUPPORT

Evaluation of expert systems - An approach and case study --- of determining software functional requirements for command management of satellites p 48 A87-16716

SATELLITE IMAGERY

The development of an intelligent user interface for NASA's scientific databases p 48 A87-28445

Gathering news from space p 113 A88-19831

The potentials and challenges afforded by SPOT-1 data p 65 A89-10945

A multi-spectral analysis system using large databases --- from satellite and ground-based observations p 56 A89-27177

Legal problems posed by the commercialization of data collected by the European Remote Sensing Satellite ERS-1 p 113 A89-33030

SATELLITE NETWORKS

White paper on new international satellite systems [PB85-162501] p 8 N85-27127

SATELLITE OBSERVATION

Data access for scientific problem solving p 19 A88-20252

Satellite data management for effective data access p 64 A88-38690

International space law norms regulating remote sensing of the earth from outer space p 113 A89-12126

Concept for a satellite-based global reserve monitoring system p 66 A89-41152

Bangladesh Agro-Climatic Environmental Monitoring Project p 79 N89-28121

SATELLITE SOUNDING

International banking of satellite and in-situ wave data by the Manne Information and Advisory Services (MIAS) p 69 N85-12434

SATELLITE TRANSMISSION

Satellite information systems --- Book p 19 A88-55015

SCHEDULING

Integrated resource scheduling in a distributed scheduling environment --- for space stations p 80 A89-21808

Deep space network resource scheduling approach and application p 86 N89-10070

Space station Platform Management System (PMS) replanning using resource envelopes p 86 N89-10071

Resource contention management in parallel systems [AD-A208809] p 32 N89-28332

SCREENING

The function of report components in the screening and reading of technical reports p 90 A84-45547

SEARCH PROFILES

Guide to human factors information sources [AD-A149102] p 52 N15-19649

Evaluation of the vocabulary switching systems [PB85-127157] p 93 N85-22260

Retrieval performance in a full text journal article database p 94 N85-27747

A study of organizational information search, acquisition, storage and retrieval [AD-A172063] p 98 N87-16650

Experiments on the cognitive aspects of information seeking and information retrieving [PB87-157699] p 38 N87-24238

SEARCHING

Information retrieval strategies in a file-search environment p 90 A84-44092

'Meatball searching' The adversarial approach to online information retrieval p 90 A86-40659

The user's mental model of an information retrieval system Effects on performance p 51 N84-32275

Design of graphic displays in computerized systems [AD-A161890] p 71 N86-24227

Content-Addressable Memory manager Design and evaluation [AD-A164037] p 23 N86-25133

SECURITY

Space Shuttle security policies and programs p 104 A85-42594

Security engineering of secure ground stations p 105 A85-42598

Protection of intellectual property in space [AIAA PAPER 86-2779] p 112 A87-18859

Department of defense trusted computer system evaluation criteria [AD-A141304] p 108 N84-28498

Keeping the nation's secrets A report to the Secretary of Defense by the Commission to Review DoD Security Policies and Practices [AD-A161998] p 110 N86-24562

Relevance of international research facilities to international stability [DE89-009400] p 103 N89-23380

Using bar code technology to enhance classified document accountability p 112 N88-70733

SEISMOLOGY

Archiving and exchange of a computerized manne seismic database The ROSE data archive system [DE84-901453] p 69 N85-13677

SELECTION

Satisficing decision-making in supervisory control, part 2 [AD-A174631] p 59 N87-20128

Advanced human factors engineering tool technologies [AD-A189390] p 54 N88-20825

SELECTIVE DISSEMINATION OF INFORMATION

Security implications of the Space Station information system p 104 A85-42593

Space Shuttle security policies and programs p 104 A85-42594

Word processors in aerospace/defense information services Use of distributed information systems by the Office of the Secretary of Defense p 4 N84-21429

Project FIRST (Faculty Information and Research Service for Texas) technical description of project and results [PB84-161629] p 67 N84-24501

Technology transfer [H-REPT-98-15] p 4 N84-25528

The Pilot Land Data System Report of the Program Planning Workshops [NASA-TM-86250] p 67 N84-26468

GSA automated information security [PMS-P-21001] p 111 N85-72650

SELF ADAPTIVE CONTROL SYSTEMS

Self-adaptive data bases [AD-A186414] p 26 N88-15729

SELF ORGANIZING SYSTEMS

BIOMASSCOMP Artificial neural networks and neurocomputers [AD-A200902] p 44 N89-19123

SEMANTICS

Incorporating knowledge rules in a semantic data model - An approach to integrated knowledge management p 32 A87-16697

Inquiry semantics A functional semantics of natural language grammar [AD-A135153] p 36 N84-17929

Knowledge representation and natural-language semantics [AD-A148025] p 37 N85-12615

Design and implementation of an intelligence database [AD-A154095] p 70 N85-30973

Exploiting lexical regularities in designing natural language systems [AD-A195922] p 40 N88-30375

SNePS considered as a fully intensional propositional semantic network p 27 N89-13114

Integrating syntax, semantics, and discourse DARPA (Defense Advanced Research Projects Agency) natural language understanding program [AD-A203747] p 101 N89-20677

A multimedia database management system supporting contents search in media data [AD-A207070] p 103 N89-26780

SERVICES

- Information services. Pros and cons p 97 N86-28797
- Measuring the value of information and information systems, services and products p 97 N86-28799
- SET THEORY**
- The geonames processing system functional design specification. Volume 4. Advanced symbol processing [AD-A181874] p 71 N86-24226
- SHOCK FRONTS**
- Sandia computerized shock compression bibliographical database [DE85-018542] p 70 N86-17222
- SHOCK WAVES**
- Sandia computerized shock compression bibliographical database [DE85-018542] p 70 N86-17222
- SIGNAL ANALYSIS**
- BIOCLASSCOMP: Artificial neural networks and neurocomputers [AD-A200902] p 44 N89-19123
- SIGNAL DETECTION**
- Information and stochastic systems [AD-A192187] p 26 N88-24838
- SIGNAL GENERATORS**
- Optical Information Processing for Aerospace Applications 2 [NASA-CP-2302] p 67 N84-22402
- SIGNAL PROCESSING**
- Interactive activation models of perception and comprehension [AD-A161362] p 52 N86-21143
- Proceedings of the Scientific Data Compression Workshop [NASA-CP-3025] p 78 N89-22332
- SIMULATION**
- LORAN C Offshore Flight Following (LOFF) in the Gulf of Mexico [AD-A197179] p 75 N89-12558
- SIMULATORS**
- Design and implementation of a controller and a host simulator for a relational replicated database system [AD-A198951] p 28 N89-14176
- SOCIAL FACTORS**
- Information technologies and social transformation [PB85-240521] p 71 N86-19263
- SOCIOLOGY**
- A user's guide to the socioeconomic environmental demographic information system (SEEDIS) [AD-A168917] p 73 N87-12388
- SOFTWARE ENGINEERING**
- Experience, methods and prospects in commercial online materials data distribution p 63 A87-13182
- Integrated structural analysis for rapid design support p 18 A88-18630
- The specification and design of a system using computer-aided software engineering and performance analysis tools [AIAA PAPER 88-4410] p 19 A88-51934
- A data-base management scheme for computer-aided control engineering p 33 A88-54484
- Space Station Information Systems [IAF PAPER 88-059] p 80 A88-55330
- Common sense and practical experience prior to 2167 — defense contracts involving software development [AIAA PAPER 88-3990] p 3 A89-18144
- The software factory: A fourth generation software engineering environment — Book p 20 A89-48764
- Evaluative report on the Institute for Computer Sciences and Technology, National Bureau of Standards, fiscal year 1984 [PB85-176097] p 8 N85-31848
- Information technology R and D: Critical trends and issues [PB85-245660] p 10 N86-19960
- Modern hardware technologies and software techniques for on-line database storage and access [AD-A164993] p 24 N86-26924
- Guide to sharing personal computer resources via local area networks, revised p 25 N87-20772
- [DE86-016088]
- Space operations: NASA's use of information technology Report to the Chairman, Committee on Science, Space and Technology [GAO/IMTEC-87-20] p 11 N87-22551
- The Environment for Application Software Integration and Execution (EASIE), version 1.0 Volume 2 Program integration guide [NASA-TM-100574] p 60 N89-13995
- Distributing program entities in Ada p 29 N89-16295
- The TAVERNS emulator: An Ada simulation of the space station data communications network and software development environment p 76 N89-16366
- ISTAR evaluation [AD-A201345] p 87 N89-19903

- The computational structural mechanics testbed architecture Volume 2 Directives [NASA-CR-178385] p 78 N89-22133
- Reusing structured models via model integration [AD-A204652] p 30 N89-22369
- Research and development strategy for high performance computing [PB89-120778] p 62 N89-70498
- The Software Engineering Laboratory [NASA-CR-183455] p 89 N89-71121
- SOFTWARE TOOLS**
- Developments in decision support systems p 57 A85-31792
- Artificial intelligence - New tools for aerospace project managers p 32 A86-34986
- A library collection of software documentation specific to astronomical data reduction p 91 A89-27235
- Software aspects of earth observation [AIAA PAPER 89-0779] p 65 A89-28460
- Building maintainable large scale software systems - The measurable benefits of CASE technology [AIAA PAPER 89-5051] p 20 A89-48162
- Search and retrieval of office files using dBASE 3 [NASA-TM-86550] p 10 N86-30378
- Integration of communications with the Intelligent Gateway Processor [DE87-002386] p 25 N87-19981
- Advanced human factor engineering tool technologies [AD-A189390] p 54 N88-20825
- The Remote Atmospheric Probing Information Display (RAPID) system [AD-A196314] p 75 N89-10500
- The use of portable microcomputer as a data collection tool to support integrated simulation support environments. A concept [AD-A196414] p 14 N89-11403
- Artificial intelligence techniques for retrospective help in data analysis p 42 N89-13915
- Tools for data analysis management p 60 N89-13919
- The computational structural mechanics testbed architecture Volume 2 The interface [NASA-CR-178386] p 76 N89-15435
- ATF (Advanced Toroidal Facility) data management [DE89-001872] p 77 N89-16486
- ISTAR evaluation [AD-A201345] p 87 N89-19903
- The Environment for Application Software Integration and Execution (EASIE) version 1.0 Volume 1 Executive overview [NASA-TM-100573] p 61 N89-21538
- A visual object-oriented verification system [AD-A206228] p 30 N89-24068
- The Software Engineering Laboratory [NASA-CR-183455] p 89 N89-71121
- I/O buffer performance in a virtual memory system [NASA-CR-185730] p 32 N89-71335
- SOIL SCIENCE**
- An interactive soils information system Users manual [AD-A133480] p 66 N84-16078
- SOILS**
- An interactive soils information system Users manual [AD-A133480] p 66 N84-16078
- SOLAR RADIATION**
- A comparison of typical meteorological year solar radiation information with the SOLMET data base [DE88-009242] p 75 N88-29247
- SOLAR TERRESTRIAL INTERACTIONS**
- Solar-terrestrial data access distribution and archiving [NASA-CR-173906] p 68 N84-33295
- SOLID SURFACES**
- Why solid modeling? — in automated CAD/CAM p 32 A85-18437
- SPACE COMMERCIALIZATION**
- Space Shuttle, private enterprise and intellectual properties in the context of space manufacturing p 112 A84-22341
- Security implications of the Space Station information system p 104 A85-42593
- Intellectual property and space activities p 112 A85-49972
- Adjusting legal regimes to new commercial realities p 112 A86-34121
- Aspects of law and practice in the United States — and space commercialization p 112 A86-43349
- Protection of intellectual property in space [AIAA PAPER 88-2779] p 112 A87-18859
- Legal problems posed by the commercialization of data collected by the European Remote Sensing Satellite ERS-1 p 113 A89-33030
- Legal considerations and cooperative opportunities for space commercial activities p 113 N85-11013
- SPACE COMMUNICATION**
- Intellectual property and space activities p 112 A85-49972

- EASCON '84, Proceedings of the Seventeenth Annual Electronics and Aerospace Conference, Washington, DC, September 10-12, 1984 p 1 A86-21876
- SPACE DEBRIS**
- Man-made space debris - Data needed for rational decision p 2 A89-12107
- SPACE EXPLORATION**
- Living in the past - Knowledge capture of evolving space systems [AIAA PAPER 89-0190] p 34 A89-25165
- SPACE FLIGHT**
- Key considerations in contingency planning for secure space flight ground control centers p 105 A85-42596
- United States space policy: Review and assessment [DE88-015538] p 115 N89-13306
- SPACE LAW**
- Colloquium on the Law of Outer Space, 27th, Lausanne, Switzerland, October 7-13, 1984, Proceedings p 112 A85-29025
- Intellectual property and space activities p 112 A85-49972
- Aspects of law and practice in the United States — and space commercialization p 112 A86-43349
- The station is raising lots of questions about space law p 113 A87-34597
- Maintaining outer space for peaceful purposes through international cooperation p 2 A89-12104
- Man-made space debris - Data needed for rational decision p 2 A89-12107
- International space law norms regulating remote sensing of the earth from outer space p 113 A89-12126
- International space plans and policies - Future roles of international organizations [IAF PAPER 88-622] p 113 A89-17871
- Legal problems posed by the commercialization of data collected by the European Remote Sensing Satellite ERS-1 p 113 A89-33030
- Space stations and the law: Selected legal issues [PB87-118220] p 114 N87-21754
- International Space Policy for the 1990's and Beyond, no 86 p 114 N89-12496
- [GPO-82-158] p 114 N89-12496
- United States space policy: Review and assessment [DE88-015538] p 115 N89-13306
- National space policy [AD-A202644] p 16 N89-21711
- SPACE MANUFACTURING**
- Space Shuttle, private enterprise and intellectual properties in the context of space manufacturing p 112 A84-22341
- SPACE MISSIONS**
- National space policy [AD-A202644] p 16 N89-21711
- SPACE OBSERVATIONS (FROM EARTH)**
- Astronomical data analysis from remote sites p 3 A89-27210
- SPACE PROCESSING**
- An expert system based intelligent control scheme for space bioreactors p 44 N89-20285
- SPACE PROGRAMS**
- International space plans and policies - Future roles of international organizations [IAF PAPER 88-622] p 113 A89-17871
- SPACE SHUTTLE MISSION 51-L**
- The investigative techniques used by the Challenger Commission to address information system failures as they related to the Space Shuttle accident p 58 A88-46509
- SPACE SHUTTLE PAYLOADS**
- Space Shuttle, private enterprise and intellectual properties in the context of space manufacturing p 112 A84-22341
- SPACE SHUTTLES**
- Information systems for shuttle processing - An enterprise approach p 2 A88-52359
- SPACE STATION PAYLOADS**
- Space Station Information System - Concepts and international issues [IAF PAPER 87-76] p 64 A88-15851
- The TAVERNS emulator: An Ada simulation of the space station data communications network and software development environment p 76 N89-16366
- Space station Ada runtime support for nested atomic transactions p 77 N89-16375
- SPACE STATION STRUCTURES**
- Space station Platform Management System (PMS) replanning using resource envelopes p 86 N89-10071
- SPACE STATIONS**
- Security implications of the Space Station information system p 104 A85-42593
- Potential uses of probabilistic risk assessment techniques for space station development p 104 A85-42595
- Aspects of law and practice in the United States — and space commercialization p 112 A86-43349

- The Consultative Committee for Space Data Systems (CCSDS) planned and potential use of the recommendations [IAF PAPER 86-303] p 1 A87-18003
- Strawman Definition for the Space Station Information System Network Security [AIAA PAPER 86-2780] p 106 A87-18860
- The station is raising lots of questions about space law p 113 A87-34597
- Scientific customer needs - NASA user [AIAA PAPER 87-2196] p 49 A87-48582
- Technical and Management Information System (TMIS) [AIAA PAPER 87-2217] p 64 A87-48600
- Space Station Information System integrated communications concept [AIAA PAPER 87-2228] p 18 A87-48606
- Space Station Information System requirements for integrated communications [AIAA PAPER 87-2229] p 18 A87-48607
- Space Station Program threat and vulnerability analysis [AIAA PAPER 87-3082] p 107 A88-26210
- Space Station Information Systems [IAF PAPER 88-059] p 80 A88-55330
- Experiments with temporal reasoning applied to analysis of telemetry data - for Space Station automation p 65 A88-11809
- Integrated resource scheduling in a distributed scheduling environment - for space stations p 80 A89-21808
- Local resource utilization and integration into advanced mission's LSS [SAE PAPER 881053] p 65 A88-27851
- Space Station needs, attributes and architectural options, volume 2, book 3: Cost and programmatic [NASA-CR-173320] p 3 N84-18304
- Technical and management information system: The tool for professional productivity on the space station program p 64 N86-15171
- Space Station data system analysis/architecture study, Task 1: Functional requirements definition, DR-5 [NASA-CR-177838] p 23 N86-20473
- Remote Sensing Information Sciences Research Group, Santa Barbara Information Sciences Research Group, year 3 [NASA-CR-179769] p 72 N86-32863
- Space stations and the law: Selected legal issues [PB87-118220] p 114 N87-21754
- A shared-world conceptual model for integrating space station life sciences telepresence operations p 55 N88-30333
- Space station integrated propulsion and fluid systems study [NASA-CR-179393] p 75 N89-12581
- Generic Ada code in the NASA space station command, control and communications environment p 29 N89-16341
- Space operations: Testing of NASA's technical and management information system [GAO/IMTEC-88-28] p 101 N89-20859
- Performance issues in management of the Space Station Information System [NASA-CR-185409] p 88 N89-25773
- SPACE TRANSPORTATION SYSTEM**
- Space Shuttle, private enterprise and intellectual properties in the context of space manufacturing p 112 A84-22341
- Space Shuttle security policies and programs p 104 A85-42594
- Protection of intellectual property in space [AIAA PAPER 86-2779] p 112 A87-18859
- Legal considerations and cooperative opportunities for space commercial activities p 113 N85-11013
- Space operations, NASA's use of information technology Report to the Chairman, Committee on Science, Space and Technology [GAO/IMTEC-87-20] p 11 N87-22551
- SPACE WEAPONS**
- United States space policy: Review and assessment, [DE88-015538] p 115 N89-13306
- SPACEBORNE ASTRONOMY**
- NASA astrophysical data system (ADS) study p 81 A89-27239
- The IUE data bank: Statistics and future aspects p 115 N89-16609
- SPACECRAFT COMMUNICATION**
- NASA space information systems overview [AIAA PAPER 87-2189] p 63 A87-48577
- Data management standards for space information systems [AIAA PAPER 87-2205] p 2 A87-48590
- Space Station Information System integrated communications concept [AIAA PAPER 87-2228] p 18 A87-48606
- Space Station Information System requirements for integrated communications [AIAA PAPER 87-2229] p 18 A87-48607
- The TAVERNS emulator: An Ada emulation of the space station data communications network and software development environment p 78 N86-16366
- SPACECRAFT CONSTRUCTION MATERIALS**
- U.S. government policies and hypersonic flight in the 21st century p 3 A89-41654
- SPACECRAFT DESIGN**
- Space Station needs, attributes and architectural options, volume 2, book 3: Cost and programmatic [NASA-CR-173320] p 3 N84-18304
- SPECIFICATIONS**
- General specifications for the development of a USL NASA PC R and D statistical analysis support package [NASA-CR-184537] p 15 N89-14977
- General specifications for the development of a USL/C3MS NASA/PC R and D distributed workstation [NASA-CR-184538] p 15 N89-14978
- A computer-based specification methodology p 101 N89-16301
- Fastbus standard routines [DOE/ER-0367] p 29 N89-20645
- Guidelines for certification of existing sensitive systems [NASA-CR-174080] p 111 N85-70325
- SPECTRAL REFLECTANCE**
- Applications of multispectral video for natural resource assessment p 65 A89-10968
- SPECTRUM ANALYSIS**
- A multi-spectral analysis system using large databases - from satellite and groundbased observatories p 58 A89-27177
- Design and development of a database for spectral data and analysis results [DE87-011323] p 74 N88-11564
- SPEECH RECOGNITION**
- Implications of artificial intelligence for a user defined technical information system [AD-P003938] p 37 N85-11818
- SPOT (FRENCH SATELLITE)**
- The potentials and challenges afforded by SPOT-1 data p 65 A89-10945
- STABILITY**
- Relevance of international research facilities to international stability [DE89-009400] p 103 N89-23380
- STANDARDIZATION**
- NASA-STD-3000, Man-System Integration Standards - The new space human engineering standards [IAF PAPER 87-550] p 49 A88-18167
- Development of a proposed standard for the exchange of scientific microcomputer programs [PB84-157940] p 4 N84-24244
- An analysis of data dictionaries and their role in information resource management [AD-A152134] p 7 N85-27121
- Reference model for DBMS (database management system) standardization [PB85-225217] p 9 N86-16923
- Technical overview of the information resource dictionary system [PB85-224491] p 9 N86-18004
- Strategic, organizational and standardization aspects of integrated information systems, volume 6 [AD-A155855] p 14 N88-30457
- The design of PC/MISI, a PC-based common user interface to remote information storage and retrieval systems [NASA-CR-184523] p 55 N89-14963
- Protocol interoperability between DDN and ISO (Defense Data Network and International Organization for Standardization) protocols [AD-A206582] p 31 N89-26777
- STANDARDS**
- Computerized numeric databases for materials properties p 63 A87-13162
- The Consultative Committee for Space Data Systems (CCSDS) planned and potential use of the recommendations [IAF PAPER 86-303] p 1 A87-18003
- Man/System Integration Standards for space systems p 48 A87-33020
- Open systems interconnection for the defence community p 20 N84-21426
- Technical overview of the information resource dictionary system [PB85-224491] p 9 N86-18004
- Standards conformance testing [PB88-215645] p 14 N89-11412
- CD-ROM (Compact Disc Read Only Memory) library of the future [AD-A197943] p 100 N89-14702
- USL/DBMS NASA/RECON working paper series Standards [NASA-CR-184506] p 87 N89-14948
- Fastbus standard routines [DOE/ER-0367] p 29 N89-20645
- STATISTICS**
- Sector suite man-machine functional capabilities and performance requirements [AD-A188811] p 52 N85-19647
- STATISTICAL ANALYSIS**
- Databases for statistics p 72 N86-26000
- A user's guide to the socioeconomic environmental demographic information system (SEEDIS) [AD-A188917] p 73 N87-12388
- A comparison of typical meteorological year solar radiation information with the SOLMET data base [DE88-008242] p 75 N88-29247
- Computer Science and Statistics, Proceedings of the 18th Symposium on the Interface [AD-A191296] p 26 N89-13901
- Intelligent data management p 86 N89-13913
- Statistically sophisticated software and DYNDE p 26 N89-13920
- Computer-aided survey methods p 86 N89-13954
- General specifications for the development of a USL NASA PC R and D statistical analysis support package [NASA-CR-184537] p 15 N89-14977
- GEO-EAS (Geostatistical Environmental Assessment Software) user's guide [PB89-151252] p 89 N89-27261
- STATISTICAL MECHANICS**
- Application developer's tutorial for the CSM testbed architecture [NASA-CR-181732] p 60 N89-14473
- STELLARATORS**
- ATF (Advanced Toroidal Facility) data management [DE89-001872] p 77 N89-16486
- STOCHASTIC PROCESSES**
- Information and stochastic systems [AD-A192167] p 26 N88-24636
- STRATEGY**
- Strategy and optimization in human information processing p 48 A87-33502
- Decision-oriented strategic planning for information systems: Applying conceptual models of crisis decision-making to strategic planning for crisis management decision support systems p 15 N89-12486
- Fostering interaction of government, defense, and aerospace databases p 103 N89-23374
- Research and development strategy for high performance computing [PB89-120778] p 62 N89-70498
- STRUCTURAL ANALYSIS**
- Integrated structural analysis for rapid design support p 18 A88-18630
- The integrated analysis capability (IAC Level 2.0) p 19 A89-12180
- The computational structural mechanics testbed architecture, Volume 1: The language [NASA-CR-178384] p 78 N89-14472
- Application developer's tutorial for the CSM testbed architecture [NASA-CR-181732] p 60 N89-14473
- The computational structural mechanics testbed architecture, Volume 2: The interface [NASA-CR-178386] p 76 N89-15435
- The computational structural mechanics testbed architecture, Volume 4: The global-database manager GAL-DBM [NASA-CR-178387] p 76 N89-16195
- Cumulative reports and publications through December 31, 1988 [NASA-CR-181784] p 16 N89-20619
- The computational structural mechanics testbed architecture, Volume 2: Directives [NASA-CR-178385] p 78 N89-22133
- STRUCTURAL ENGINEERING**
- The computational structural mechanics testbed architecture, Volume 2: The interface [NASA-CR-178386] p 76 N89-15435
- TRUSS: An intelligent design system for aircraft wings p 79 N89-25162
- A large scale software system for simulation and design optimization of mechanical systems p 30 N89-25219
- SUBROUTINES**
- A project for developing a linear algebra library for high-performance computers [DE89-007501] p 78 N89-22374
- SUPERCOMPUTERS**
- Earth and environmental science in the 1980's, Part 1: Environmental data systems, supercomputer facilities and networks [NASA-CR-4029] p 24 N87-18381

- A project for developing a linear algebra library for high-performance computers [DE89-007501] p 78 N89-22374
- SUPPORT SYSTEMS**
Developments in decision support systems p 57 A85-31782
- SURFACE GEOMETRY**
Why solid modeling? — in automated CAD/CAM p 32 A85-18437
- SURVEYS**
Subjective probability, combination of expert opinion and probabilistic approaches to information retrieval p 74 N85-13085
Implications of the language of data for computing systems p 28 N89-13911
Computer-aided survey methods p 86 N89-13954
Data base development and research and editorial support [NASA-CR-183249] p 89 N89-28440
- SYMBOLIC PROGRAMMING**
Advanced data management design for autonomous tele robotic systems in space using spaceborne symbolic processors p 41 N89-10096
- SYNTAX**
Exploiting lexical regularities in designing natural language systems [AD-A195922] p 40 N88-30375
Integrating syntax, semantics, and discourse DARPA (Defense Advanced Research Projects Agency) natural language understanding program [AD-A203747] p 101 N89-20677
- SYSTEM EFFECTIVENESS**
Evaluation of expert systems - An approach and case study — of determining software functional requirements for command management of satellites p 48 A87-18716
The acquisition management information system. Friend or foe? [AD-P002751] p 67 N84-23298
Department of defense trusted computer system evaluation criteria [AD-A141304] p 108 N84-28498
Design, test, and evaluation of an Air Force environmental model and data exchange [AD-A143226] p 68 N84-33060
Maintenance Management Information and Control System (MMICS) Administrative boon or burden [AD-A145782] p 83 N85-12790
- SYSTEM FAILURES**
The investigative techniques used by the Challenger Commission to address information system failures as they related to the Space Shuttle accident p 58 A88-46509
Fallible humans and vulnerable systems - Lessons learned from aviation p 50 A88-46511
- SYSTEMS ANALYSIS**
A systematic method for evaluating security requirements compliance p 105 A85-42587
Design of a scientific information collation and dissemination system, volumes 1 thru 3 [AD-A148002] p 69 N85-12791
Annotated bibliography of publications dealing with occupational health and medical information systems, cost analysis procedures, evaluation methodology and related legal issues [AD-A156650] p 94 N86-11078
Space Station data system analysis/architecture study Task 1 Functional requirements definition, DR-5 [NASA-CR-177838] p 23 N86-20473
Content-Addressable Memory manager Design and evaluation [AD-A164037] p 23 N86-25133
Information technology resources long-range plan, FY 1987-FY 1991 [DE86-010457] p 11 N86-33206
A study of organizational information search, acquisition, storage and retrieval [AD-A172063] p 98 N87-16650
The impact of information technology on research in science and engineering [DE88-000342] p 13 N88-12417
Monitoring the usage of a computer system [DE88-004310] p 111 N88-22542
Object-oriented approach to integrating database semantics, volume 4 [AD-A195853] p 41 N89-10672
Software process modeling [AD-A197137] p 27 N89-13154
A database approach to computer integrated manufacturing [AD-A201030] p 16 N89-18088
Security concepts for microprocessor based key generator controllers [AD-A155194] p 111 N85-74089

SYSTEMS COMPATIBILITY

- Development of a proposed standard for the exchange of scientific microcomputer programs [PB84-157940] p 4 N84-24244
Protocol interoperability between DDN and ISO (Defense Data Network and International Organization for Standardization) protocols [AD-A206582] p 31 N89-26777

SYSTEMS ENGINEERING

- Security engineering of secure ground stations p 105 A85-42598
A systems-approach to the design of the Eos data and information system p 64 A87-53207
A proposed Applications Information System - Concept, implementation, and growth [IAF PAPER 87-156] p 64 A88-15906
The specification and design of a system using computer-aided software engineering and performance analysis tools [AIAA PAPER 88-4410] p 19 A88-51834
Developments in interdisciplinary simulation and design software for mechanical systems p 19 A89-26248
Requirements analysis for forward funding tracking system, volume 1 [AD-A136840] p 81 N84-20425
Automated RTOP management system p 82 N84-21406
The advantages of abstract control knowledge in expert system design [AD-A139976] p 36 N84-25370
Implementing automated information systems in the Air Force [AD-A143398] p 6 N84-33288
Networking p 21 N84-34381
Future database machine architectures [AD-A148786] p 22 N85-16481
NASA guidelines for assuring the adequacy and appropriateness of security safeguards in sensitive applications [NASA-CR-175489] p 109 N85-28593
Design and implementation of an intelligence database [AD-A154095] p 70 N85-30973
Information Systems development aids [DE85-016161] p 10 N86-18246
The role of databases in knowledge-based systems [AD-A166365] p 38 N86-30573
Knowledge-based integrated information systems engineering Highlights and bibliography Knowledge-Based Integrated Information Systems Engineering (KBIIE) Project, volume 1 [AD-A195850] p 40 N88-30449
Technical opinions regarding knowledge-based integrated information systems engineering, volume 8 [AD-A195857] p 40 N88-30454
Knowledge-Based Integrated Information Systems Development Methodologies Plan Knowledge-Based Integrated Information Systems Engineering (KBIIE) report, volume 2 [AD-A195851] p 41 N88-30455
Reusing structured models via model integration [AD-A204652] p 30 N89-22369
Advanced computing systems' An advanced reasoning-based development paradigm for Ada trusted systems and its application to MACH [AD-A206308] p 45 N89-24070
User's guide for the ENGNODE database system for LBL engineering notes, version 1.2 [DE85-016652] p 80 N89-70024
- SYSTEMS INTEGRATION**
Man/System Integration Standards for space systems p 48 A87-33020
Space Station Information System integrated communications concept [AIAA PAPER 87-2228] p 18 A87-48606
Space Station Information System requirements for integrated communications [AIAA PAPER 87-2229] p 18 A87-48607
Applying technology to systems. Aerospace Computer Security Conference, 3rd, Orlando, FL, Dec 7-11, 1987, Technical Papers p 107 A88-26209
Advanced helicopter cockpit information management p 49 A88-35376
Information systems for shuttle processing - An enterprise approach p 2 A88-52359
Coping with legacy factors — in data base management systems integration p 19 A89-12176
An aid for instruction on integrated engineering design and support p 50 A89-12179
Development of a proposed standard for the exchange of scientific microcomputer programs [PB84-157940] p 4 N84-24244
Interactive information environments A plan for enabling interdisciplinary research [RAND/N-2115] p 6 N84-33284

- Towards an ideal database server for office automation environments [AD-A148184] p 7 N85-17742
Microcomputer-based local automation model. Functional description [AD-A160610] p 95 N86-19002
Knowledge-based integrated information systems engineering: Highlights and bibliography. Knowledge-Based Integrated Information Systems Engineering (KBIIE) Project, volume 1 [AD-A195850] p 40 N88-30449
Knowledge-Based Integrated Information Systems Development Methodologies Plan Knowledge-Based Integrated Information Systems Engineering (KBIIE) report, volume 2 [AD-A195851] p 41 N88-30455
The Environment for Application Software Integration and Execution (EASIE), version 1.0. Volume 2: Program integration guide [NASA-TM-100574] p 80 N89-13995
System integration of knowledge-based maintenance aids p 42 N89-14768
A database approach to computer integrated manufacturing [AD-A201030] p 16 N89-18088
An architecture for integrating distributed and cooperating knowledge-based Air Force decision aids p 44 N89-18841
A large scale software system for simulation and design optimization of mechanical systems p 30 N89-25219
- SYSTEMS MANAGEMENT**
Algorithm 607 - Text exchange system. A transportable system for management and exchange of programs and other text p 16 A84-44325
Navy information systems. Planning, policy, organization, and management [PB85-176113] p 8 N85-32038
Federal information systems management. Problems, solutions and more problems [AD-A111366] p 11 N87-13353
Resource contention management in parallel systems [AD-A208809] p 32 N89-28332
- SYSTEMS SIMULATION**
Modeling and analysis of teams of interacting decisionmakers with bounded rationality p 57 A84-21644

T

- TABLES (DATA)**
Implications of the language of data for computing systems p 28 N89-13911
- TASK COMPLEXITY**
Effects of display proximity and memory demands on the understanding of dynamic multidimensional information p 48 A87-33044
Memory and subjective workload assessment p 52 N86-32983
Knowledge-based load leveling and task allocation in human-machine systems p 53 N86-32985
- TEAMS**
Modeling and analysis of teams of interacting decisionmakers with bounded rationality p 57 A84-21644
- TECHNICAL WRITING**
The function of report components in the screening and reading of technical reports p 90 A84-45547
Computer-aided writing [AD-A192516] p 54 N88-26837
Electronic data generation and display system p 61 N89-19891
- TECHNOLOGICAL FORECASTING**
Guidance, navigation, and control for 21st century aircraft p 1 A86-34194
Beyond the data base Technology for information resource management [AD-A138840] p 4 N84-23402
Future information technology, 1984 telecommunications [NBS/SP-500/119] p 22 N85-27762
- TECHNOLOGIES**
Scientific and technical information system for the Washington State Legislature [PB84-100650] p 66 N84-18112
The automated information retrieval system in the field of science and science Policy-AWION [AD-A135565] p 66 N84-19174
EPALIT A data management system applied to the control and retrieval of technical reports [PB85-193068] p 94 N85-35828
Interactive access to scientific and technological factual databases worldwide [DE88-016172] p 100 N89-14943

- Egyptian National System for Scientific and Technical Information. Design study (PB84-179423) p 80 N84-75267
- TECHNOLOGY ASSESSMENT**
 Future information technology - The big picture (AAS PAPER 86-111) p 2 A87-53087
 Information technologies and social transformation (PB85-240521) p 71 N86-19263
 Technology assessment. Methods for measuring the level of computer security (PB86-129954) p 110 N86-25140
 An assessment of CO ROM (Compact Disk Read Only Memory) (AD-A169259) p 72 N87-11492
- TECHNOLOGY TRANSFER**
 Technology transfer (H-REPT-98-15) p 4 N84-25528
 Interactive information environments. A plan for enabling interdisciplinary research (RAND/N-2115) p 6 N84-33284
 Evaluative report on the Institute for Computer Sciences and Technology, National Bureau of Standards, fiscal year 1984 (PB85-176097) p 8 N85-31848
 Electronic information management and productivity (DE85-013362) p 9 N85-35818
 Editors rattle space p 114 N86-10586
 Technology transfer is opportunity transfer (DE85-016622) p 114 N86-17230
 Technology transfer (GPO-49-539) p 114 N86-21458
 Technology transfer at DARPA. The Defense Advanced Research Projects Agency. Executive summary (AD-A164503) p 10 N86-27110
 Analysis of the use of Defense Technical Information Center resources by research and development centers and laboratories in the US Army (AD-A168441) p 97 N86-33203
 Technology transfer primer (PB86-205341) p 73 N87-12404
 New technologies and intellectual property. An economic analysis (N-2601-NSF) p 114 N88-10695
 Technology transfer for development of coastal zone resources. Caribbean experts examine critical issues p 77 N89-18749
 Information resources management p 17 N89-23371
 Technology transfer report (DE89-009044) p 103 N89-23381
 Information transfer in Soviet science and engineering (RAND-R-2667-ARPA) p 80 N84-74361
 Research and development strategy for high performance computing (PB89-120778) p 62 N89-70498
- TECHNOLOGY UTILIZATION**
 Technology advances for information access - Prospects and impact (AIAA PAPER 89-0849) p 91 A89-25618
 Expertvision - A video-based non-contact system for motion measurement p 35 A89-45136
 Technology transfer (H-REPT-98-15) p 4 N84-25528
 A user view of office automation or the integrated workstation p 6 N84-33271
 Technology transfer (GPO-49-539) p 114 N86-21458
 Analysis of the use of Defense Technical Information Center resources by research and development centers and laboratories in the US Army (AD-A168441) p 97 N86-33203
 New technologies and intellectual property. An economic analysis (N-2601-NSF) p 114 N88-10695
 Optical laser technology, specifically CD-ROM (Compact Disc - Read Only Memory) and its application to the storage and retrieval of information (AD-A184111) p 74 N88-12086
- TELECOMMUNICATION**
 Telescience, an operational approach to science investigation (IAF PAPER 88-011) p 2 A89-17630
 Report on US domestic and international telecommunications and information markets (PB84-166362) p 21 N84-27602
 Policy implications of information technology (PB84-183219) p 5 N84-31060
 The role of information technology in emergency management (GPO-29-457) p 69 N84-34319
 Five-year plan for meeting the automatic data processing and telecommunications needs of the Federal Government. Volume 1. Planning strategies (PB84-214501) p 21 N85-12777
 Computer and communications security and privacy (GPO-39-741) p 109 N85-21994
- Future information technology, 1984 telecommunications (PB85-165850) p 22 N85-26173
 Future information technology, 1984 telecommunications (NBS/S-7-500/119) p 22 N85-27762
 Computer security policies (GPO-52-154) p 109 N86-15919
 Automated Information Management Technology (AIM-TECH) Considerations for a technology investment strategy (AD-A161139) p 38 N86-20173
 Telecommunications alternatives for federal users. Market trends and decisionmaking criteria. (PB86-153764) p 23 N86-25687
 A user's guide to the socioeconomic environmental demographic information system (SEEDIS) (AD-A168917) p 73 N87-12388
 Defending secrets, sharing data. New locks and keys for electronic information (PB88-143185) p 111 N88-20210
 Information and stochastic systems (AD-A192167) p 26 N88-24838
 Integrating images, applications, and communications networks, volume 5 (AD-A195854) p 26 N88-30452
 Integrating distributed homogeneous and heterogeneous databases. Prototypes, volume 5 (AD-A195852) p 27 N89-10668
 Telecommunications security and privacy p 111 N85-74342
- TELECONFERENCING**
 Office automation. A look beyond word processing (AD-A132784) p 36 N84-28670
- TELEMETRY**
 The man-machine interface in computerized telemetry systems p 46 A84-32429
 Experiments with temporal reasoning applied to analysis of telemetry data -- for Space Station automation p 65 A89-11809
 Automated cataloging and characterization of space-derived data p 91 A89-21812
 Real-time knowledge-based monitoring of telemetry data p 34 A89-33685
 Automated cataloging and characterization of space-derived data p 13 N88-30554
 The Remote Atmospheric Probing Information Display (RAPID) system (AD-A196314) p 75 N89-10500
 Proceedings of the Scientific Data Compression Workshop (NASA-CP-3025) p 78 N89-22332
- TELEOPERATORS**
 Advanced data management design for autonomous tele robotic systems in space using spaceborne symbolic processors p 41 N89-10096
- TELEVISION SYSTEMS**
 Lewis Information Network (LINK) Background and overview (NASA-TM-100162) p 25 N88-11925
- TERRAIN FOLLOWING AIRCRAFT**
 Integrated Terrain Access/Retrieval System p 62 A85-44992
- TEST EQUIPMENT**
 AUTOTESTCON '88. Proceedings of the IEEE International Automatic Testing Conference, Minneapolis, MN, Oct 4-6, 1988 p 33 A89-17998
 The computational structure: mechanics testbed architecture. Volume 1. The language (NASA-CR-178384) p 76 N89-14472
 Application developer's tutorial for the CSM testbed architecture (NASA-CR-181732) p 60 N89-14473
 The computational structural mechanics testbed architecture. Volume 2. The interface (NASA-CR-178386) p 76 N89-15435
- TEST RANGES**
 Universal documentation system handbook - an introduction to the universal documentation system (AD-A140140) p 5 N84-25742
- TEXTS**
 Algorithm 607 - Text exchange system. A transportable system for management and exchange of programs and other text p 18 A84-44325
 Page indexing for textual information retrieval systems p 93 N84-32277
 Logical and physical database design with a full-text environment (DE85-015683) p 23 N86-16159
 Text compression using word tokenization (DE86-000432) p 95 N86-19260
 Computer technologies and institutional memory p 55 N89-20062
- THEMATIC MAPPING**
 NASA pilot land data system p 68 N84-31741
- THERMODYNAMIC PROPERTIES**
 Thermodynamics of materials in the range C10-C16 data base reference manual (DE88-001244) p 76 N89-16018
- THERMODYNAMICS**
 Thermodynamics of materials in the range C10-C16 data base reference manual (DE88-001244) p 76 N89-16018
- THESAURI**
 Capitalizing on experience with intelligence gateway software (AD-A193362) p 99 N88-27971
 Exploiting lexical regularities in designing natural language systems (AD-A195922) p 40 N88-30375
- THREAT EVALUATION**
 Space Station Program threat and vulnerability analysis (AIAA PAPER 87-3082) p 107 A88-26210
 Decision-oriented strategic planning for information systems. Applying conceptual models of crisis decision-making to strategic planning for crisis management decision support systems p 15 N89-12486
- THREE DIMENSIONAL MODELS**
 Development and validation of an advanced low-order panel method (NASA-TM-101024) p 75 N89-12554
- TILT ROTOR AIRCRAFT**
 Human factors impact on the V-22 Osprey cockpit development - An overview p 50 A89-18865
- TIME SERIES ANALYSIS**
 A system for management, display and analysis of oceanographic time series and hydrographic data p 65 A89-12863
- TOPOGRAPHY**
 User interface design for two dimensional polygonality encoded geological survey maps (AD-A170612) p 53 N87-13840
- TOPOLOGY**
 IBM's token-ring LAN (Local-Area Network) A base-level communications solution (AD-A143446) p 21 N84-33063
- TOROIDAL PLASMAS**
 ATF (Advanced Toroidal Facility) data management (DE89-001872) p 77 N89-16486
- TRADEOFFS**
 Precision-time tradeoffs. A paradigm for processing statistical queries on databases (DE88-012024) p 60 N89-11408
- TRAINING DEVICES**
 Development of a computer-managed readiness assessment system (AD-A162931) p 71 N86-24215
- TRAINING EVALUATION**
 Development of a computer-managed readiness assessment system (AD-A162931) p 71 N86-24215
- TRANSLATING**
 Translations of scientific and technical literature. A guide to their location p 99 N88-23686
- TRANSPORT AIRCRAFT**
 An advanced media interface for control of modern transport aircraft navigational systems (AIAA PAPER 84-2686) p 46 A85-17865
- TRENDS**
 Research and development strategy for high performance computing (PB89-120778) p 62 N89-70498
- TRIBOLOGY**
 Towards a tribology information system. The results of a Planning Workshop held at the National Bureau of Standards, July-August 1985 (PB88-1686N4) p 26 N88-21448

U

- ULTRAVIOLET ASTRONOMY**
 The IUE data bank. Statistics and future aspects p 115 N89-16609
- ULTRAVIOLET SPECTRA**
 IUE archived spectra (NASA-TM-100715) p 101 N89-15829
 EDITSPEC. A FORTRAN 77 program for editing and manipulating spectral data from the Vanan CARY 2390 UV-VIS-NIR spectrophotometer (AD-A200352) p 29 N89-16389
 The IUE data bank. Statistics and future aspects p 115 N89-16609
- UNITED STATES**
 Aspects of law and practice in the United States -- and space commercialization p 112 A86-43349
 Managing federal information resources. Report under the Paperwork Reduction Act of 1980 (PB86-247682) p 10 N86-25299

- Freedom of Information Act NonCompliance with
affirmative disclosure provisions
[AD-A166589] p 10 N86-33204
- Federal government information technology
Management, security and congressional oversight
[PB86-205499] p 110 N87-12397
- Managing federal information resources: Report under
the Paperwork Reduction Act of 1980
[PB87-114138] p 12 N87-25878

UNIVERSITIES

- University participation via UNIDATA, part 1
p 72 N86-29295
- University participation via UNIDATA, part 2
p 72 N86-29296

UNIX (OPERATING SYSTEM)

- Integrity mechanisms in a secure UNIX - Gould
UTX/32S
[AIAA PAPER 86-2761] p 105 A87-18854
- Empirical user modeling - Command usage analyses for
deriving models of users p 49 A88-35404

USER MANUALS (COMPUTER PROGRAMS)

- An interactive soils information system: Users manual
[AD-A133480] p 66 N84-16078
- Information Systems development aids
[DE85-018161] p 10 N86-18246
- A user's guide to the socioeconomic environmental
demographic information system (SEEDIS)
[AD-A168917] p 73 N87-12388
- Quick-look guide to the crustal dynamics project's data
information system
[NASA-TT-4-87818] p 73 N87-23018
- KREME (Knowledge Representation, Editing and
Modeling Environment) A user's introduction, phase 1
[AD-A188906] p 39 N88-20052
- Walter user's manual (Version 1.0)
[AD-A192542] p 55 N88-28644
- Develop an automated Data Base Management System
(DBMS) Report on DBMS software and user's guide
[DE88-015996] p 27 N89-10674
- REFREE. Bibliographic database manager,
documentation
[PB86-200787] p 100 N89-11620
- Computer science and technology: Guide to distributed
database management
[PB86-201561] p 27 N89-11621
- Application developer's tutorial for the CSM testbed
architecture
[NASA-CR-181732] p 60 N89-14473
- Users manual for the Research Notes System (Version
1.5)
[DE89-001391] p 87 N89-15787
- Meteorological processor for regulatory models
(MPRM-1.1) user's guide
[PB89-127526] p 78 N89-22188
- Link performance data management and analysis
system users manual
[AD-A203605] p 88 N89-22356
- Engineering Graphics System (EGS) user's manual
[DE87-009668] p 79 N89-23199
- Technology Master List data base management system,
user's manual
[PB89-177802] p 89 N89-27590

USER REQUIREMENTS

- The function of report components in the screening and
reading of technical reports p 90 A84-45547
- EXAMINE - An expert system to mediate
human-computer dialogs p 47 A86-23740
- Scientific customer needs - NASA user
[AIAA PAPER 87-2196] p 49 A87-48582
- Integrated resource scheduling in a distributed
scheduling environment - for space stations
p 80 A89-21808
- The Transportable Applications Environment - An
interactive design-to-production development system
p 50 A89-29067
- Modeling the user in intelligent user interfaces
[DE84-012664] p 50 N84-14795
- Guide to the development of a human factors
engineering data retrieval system
[AD-A136918] p 51 N84-20187
- Research on interactive acquisition and use of
knowledge
[AD-A137436] p 36 N84-20270
- Implications of artificial intelligence for a user defined
technical information system
[AD-P003938] p 37 N85-11618
- Intelligent information retrieval from on-line technical
documentation
[AD-P003946] p 37 N85-11626
- Design of a scientific information collation and
dissemination system, volumes 1 thru 3
[AD-A146002] p 69 N85-12791
- Sector suite man-machine functional capabilities and
performance requirements
[AD-A148881] p 52 N85-19647

- Evaluation of the vocabulary synchronizing systems
[PB85-127157] p 93 N85-22260
- Introduction to the Space Physics Analysis Network
(SPAN)
[HASA-TM-86499] p 22 N85-24198
- The flow of scientific and technical information in the
US Army Research Laboratories
[AD-A155050] p 9 N85-33043
- A model for graphics interface tool development
p 70 N85-34545
- Guidelines for submitting data to the National Space
Science Data Center
[NASA-TM-87500] p 23 N86-15209
- A process activity monitor for AOS/VIS
[NASA-TM-86535] p 109 N86-19950
- Space Station data system analysis/architecture study
Task 1: Functional requirements definition, DR 5
[NASA-CR-177838] p 23 N86-20473
- The DoD gateway information system Prototype
experience
[AD-A166200] p 97 N86-30570
- Documentation of materials data for computer storage
and retrieval
[DE86-009509] p 72 N87-11493
- Proceedings of the 2nd Conference on Computer
Interfaces and Intermediates for Information Retrieval
[AD-A174000] p 53 N87-16657
- Guide to sharing personal computer resources via local
area networks, revised
[DE86-016088] p 25 N87-20772
- The development of a prototype intelligent user interface
subsystem for NASA's scientific database systems
[NASA-TM-87821] p 53 N87-24098
- The future of interstate networking
[DE87-007912] p 25 N87-24116

- The success or failure of management information
systems: A theoretical approach
[DE87-007802] p 85 N87-24233
- Optical laser technology, specifically CD-ROM (Compact
Disc - Read Only Memory) and its application to the storage
and retrieval of information
[AD-A184111] p 74 N88-12066
- Capitalizing on experience with intelligence gateway
software
[AD-A193362] p 99 N88-27971
- Concepts and implementations of natural language
query systems
[NASA-CR-184514] p 60 N89-14954
- The design of PC/MIS: a PC-based common user
interface to remote information storage and retrieval
systems. Presentation visuals
[NASA-CR-184524] p 55 N89-14964
- A computer-based specification methodology
p 101 N89-16301
- Information systems for the Space Station ERA
p 101 N89-18758
- Increasing user-friendliness in AI systems
[DE89-005093] p 56 N89-20704
- Identifying users and how to reach them
p 102 N89-23370
- An expert system to facilitate selecting a database
management system
[DE89-012350] p 45 N89-25774
- A multimedia database management system supporting
contents search in media data
[AD-A207070] p 103 N89-26780
- An implementation of a data definition facility for the
graphics language for database
[AD-A207380] p 89 N89-28442
- NASA scientific and technical information system
study
p 104 N89-70333
- UTILITY AIRCRAFT
Development of a computer-managed readiness
assessment system
[AD-A162931] p 71 N86-24215

V

VALUE

- Measuring the value of information and information
systems, services and products p 97 N86-28799

VECTORS (MATHEMATICS)

- Proceedings of the Scientific Data Compression
Workshop
[NASA-CP-3025] p 78 N89-22332

VEGETATION

- Remote Sensing Information Sciences Research Group,
Santa Barbara Information Sciences Research Group, year
3
[NASA-CR-179789] p 72 N86-32863
- VEGETATIVE INDEX
NASA plot land data system p 68 N84-31741

VERY LARGE SCALE INTEGRATION

- Issues and themes in information science and
technology
[AIAA PAPER 87-1661] p 1 A87-31113

VIDEO DISKS

- Videodisc premastering facility Technical evaluation
[PB84-135821] p 20 N84-20840

VIDEO EQUIPMENT

- Applications of multispectral video for natural resource
assessment p 65 A89-10968
- ExpertVision - A video-based non-contact system for
motion measurement p 35 A89-45136
- Videodisc premastering facility Technical evaluation
[PB84-135821] p 20 N84-20840

VISIBLE SPECTRUM

- EDITSPEC A FORTRAN 77 program for editing and
manipulating spectral data from the Vassar CARY 2390
UV-VIS-NIR spectrophotometer
[AD-A200352] p 29 N89-16389

VISION

- Interactive activation models of perception and
comprehension
[AD-A161362] p 52 N86-21143

VOICE CONTROL

- A systems approach to ATE documentation
p 62 A85-26824

VULNERABILITY

- Information systems, security and privacy
[RAND/P-6930] p 107 N84-21402
- Defending secrets, sharing data: New locks and keys
for electronic information
[PR-143185] p 111 N88-20210

W

WARNING SYSTEMS

- Planner system for the application of indications and
warning p 42 N89-13188

WATER MANAGEMENT

- Use of a geographic information system (GIS) to improve
planning for and control of the placement of dredged
material p 66 A89-41157

WATER WAVES

- International banking of satellite and in-situ wave data
by the Marine Information and Advisory Services (MIAS)
p 69 N85-12434

WEAPON SYSTEMS

- An evaluation of two reliability and maintainability
information systems
[AD-A143438] p 58 N84-33290
- SAFEORD: Safety of explosive ordnance databank
[AD-A154058] p 70 N85-30972

WEATHER

- Acquisition, use and archiving of weather data
[DE86-014769] p 25 N87-18282

WEATHER FORECASTING

- University participation via UNIDATA, part 1
p 72 N86-29295
- The Remote Atmospheric Probing Information Display
(RAPID) system
[AD-A196314] p 75 N89-10500
- Hanford meteorological station computer codes: Volume
9 The quality assurance computer codes
[DE89-008414] p 78 N89-22295
- Bangladesh Agro-Climatic Environmental Monitoring
Project p 79 N89-28121

WEATHER STATIONS

- Hanford meteorological station computer codes, Volume
9 The quality assurance computer codes
[DE89-008414] p 78 N89-22295

WORD PROCESSING

- Computer software for working with language
p 46 A84-44871
- Office automation: A look beyond word processing
[AD-A132764] p 36 N84-28670
- Document interchange format
[PB84-217033] p 7 N85-16517
- The genomes processing system functional design
specification: Volume 4 Advanced symbol processing
[AD-A161874] p 71 N86-24226

WORDS (LANGUAGE)

- Exploiting lexical regularities in designing natural
language systems
[AD-A195922] p 40 N88-30375
- Integrating syntax, semantics, and discourse DARPA
(Defense Advanced Research Projects Agency) natural
language understanding program
[AD-A203747] p 101 N89-20677

WORK

- Sector suite man-machine functional capabilities and
performance requirements
[AD-A148881] p 52 N85-19647

WORKLOAD (PSYCHOPHYSIOLOGY)

- Subjective workload and individual differences in
information processing abilities
[SAF PAPER 841481] p 47 A86-28011
- Memory and subjective workload assessment
p 52 N86-32883
- Knowledge-based load leveling and task allocation in
human-machine systems p 53 N86-32885

WORKSTATIONS

- The evaluation and extension of TAE in the development
of a user interface management system
p 53 N87-23158
- Foundation: Transforming data bases into knowledge
bases p 38 N86-18423
- General specifications for the development of a
USL/DBMS NASA/PC R and D distributed workstation
[NASA-CR-184538] p 15 N86-14878
- Concurrent Image Processing Executive (CIPE)
[NASA-CR-185480] p 31 N86-25819

WORLD DATA CENTERS

- Guidelines on the structure, management, and operation
of climate data centers
[WCP-88] p 72 N86-32836

WORLD METEOROLOGICAL ORGANIZATION

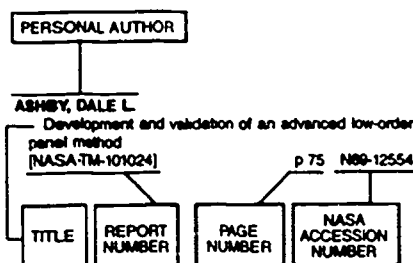
- Guidelines on the structure, management, and operation
of climate data centers
[WCP-88] p 72 N86-32836

X

X-Y PLOTTERS

- Engineering Graphics System (EGS) user's manual
[DE86-008886] p 79 N86-23199

Typical Personal Author Index Listing



Listings in this index are arranged alphabetically by personal author. The title of the document provides the user with a brief description of the subject matter. The report number helps to indicate the type of document listed (e.g., NASA report, translation, NASA contractor report). The page and accession numbers are located beneath and to the right of the title. Under any one author's name the accession numbers are arranged in sequence with the AIAA accession numbers appearing first.

A

- ABRAHAMSON, CYNTHIA A.**
Use of a geographic information system (GIS) to improve planning for and control of the placement of dredged material p 66 A89-41157
- ABNETT, GLENN**
KREME (Knowledge Representation, Editing and Modeling Environment). A user's introduction, phase 1 [AD-A188808] p 39 N86-20052
- AGARWAL, AMURAG**
Increasing user-friendliness in AI systems [DE89-005083] p 56 N89-20704
- ALBERTSON, M. R.**
Design, test, and evaluation of an Air Force environmental model and data exchange [AD-A143228] p 68 N84-33080
- ALEXANDER, C. L.**
Information Management in the Department of Defense. The role of libraries [AD-A130345] p 80 N85-70560
- ALLAN, F. C.**
Information network for numeric databases of materials properties [DE87-010512] p 74 N87-28460
- AMARIEL, SAUL**
Issues and themes in information science and technology [AIAA PAPER 87-1661] p 1 A87-31113
- AMIN, H. A.**
Evaluating the appropriateness of microcomputers for litigation document management using the analytic hierarchy process p 69 N85-24786
- AMMANN, J. M.**
User interface design for two dimensional polygonally encoded geological survey maps [AD-A170612] p 53 N87-13840
- AMMERMAN, H. A.**
Sector suite man-machine functional capabilities and performance requirements [AD-A148881] p 52 N85-19647
- AM, Y. KIM**
A data analysis expert system for large established distributed databases p 33 A89-11718

- ANDERSON, C. E.**
Sandia computerized shock compression bibliographical database [DE85-018542] p 70 N86-17222
- ANDERSON, MATTHEW P.**
Empirical user modeling - Command usage analysis for deriving models of users p 49 A88-35404
- ANDREWS, G. L.**
Hanford meteorological station computer codes. Volume 9: The quality assurance computer codes [DE89-008414] p 78 N89-22265
- ANTCZAK, T.**
Advanced Technology Unit Training and Management System (ATUTMS). User's guide [NASA-CR-176843] p 71 N86-22130
- ARCHER, D. G.**
Thermodynamics of materials in the range C10-C16 data base reference manual [DE89-001244] p 76 N89-18018
- ARONEY**
Sector suite man-machine functional capabilities and performance requirements [AD-A148881] p 52 N85-19647
- ARNAV, G.**
Preserving the time dimension in information systems p 37 N85-12784
- ARORA, J. S.**
An integrated data base management system for engineering applications based on an extended relational model p 19 A89-12181
- ASAY, J. R.**
Sandia computerized shock compression bibliographical database [DE85-018542] p 70 N86-17222
- ASHBY, DALE L.**
Development and validation of an advanced low-order panel method [NASA-TM-101024] p 75 N89-12554
- AUERBACH, E.**
The AGS Booster control system [DE86-013980] p 28 N89-14068
- AUPING, JUDITH V.**
Laboratory Information Management System (LIMS) A case study [NASA-TM-100835] p 26 N88-21897
- AUSTIN, A.**
Experiments with temporal reasoning applied to analysis of telemetry data p 65 A89-11809
- AVEDISSIAN, HAGOP A.**
CD-ROM (Compact Disc Read Only Memory) library of the future [AD-A197943] p 100 N89-14702
- AVETISOV, M. A.**
Description of a tentative US-USSR common communication format [DE86-004676] p 96 N86-25681
- AYTACER, E. JR.**
General design considerations of an Air Force information system [AD-A150611] p 7 N85-23449

B

- BAILEY, C.**
TIS. An intelligent gateway computer for information and modeling networks. Overview [DE83-017986] p 20 N84-14067
- BAILEY, D. J.**
Monitoring the usage of a computer system [DE86-004310] p 111 N88-22542
- BAKER, CHARLES R.**
Information and stochastic systems [AD-A192167] p 26 N88-24838
- BAKER, D. B.**
State-of-the-art in computer security for DoD space systems [AIAA PAPER 86-2778] p 107 A87-18864
- BARINOV, A. S.**
Description of a tentative US-USSR common communication format [DE86-004676] p 96 N86-25681
- BARNER, JOHN H.**
Development of a dBase III plus database for office automation within the Department of Logistics Management, School of Systems and Logistics [AD-A202628] p 18 N89-22354
- BARNETT, D.**
Text compression using word tokenization [DE86-000832] p 95 N86-18280
- BARNETT, A. J.**
The costs of not having refined information p 59 N86-28798
- BARRON, W.**
Computer resource management technology program (PE 64740F). Task no. 9: Advanced user authentication [PB88-183088] p 111 N88-25163
- BARYLAK, MICHAEL**
The IUE data bank: Statistics and future aspects p 115 N89-18809
- BASS, L. J.**
An approach to user specification of interactive display interfaces p 47 A85-43401
- BASSARI, JINOUS**
General specifications for the development of a USL NASA PC R and D statistical analysis support package [NASA-CR-184537] p 15 N89-14977
- BATES, PRESTON R.**
TRUSS: An intelligent design system for aircraft wings p 79 N89-25162
- BATSON, ROBERT G.**
Characteristics of R&D management which influence information needs p 2 A88-10402
- BAUER, R. K.**
Security concepts for microprocessor based key generator controllers [AD-A155194] p 111 N85-74089
- BAUM, D.**
A systems approach to ATE documentation p 82 A85-26824
- BAYLOR, L. R.**
ATF (Advanced Toroidal Facility) data management [DE89-001872] p 77 N89-16486
- BEHNKE, JEANNE M.**
Quick-look guide to the crustal dynamics project's data information system [NASA-TM-87818] p 73 N87-23018
- BEINBORN, E. A.**
Technology transfer primer [PB86-205341] p 73 N87-12404
- BELFORD, PETER**
The hack attack - Increasing computer system awareness of vulnerability threats [AIAA PAPER 87-3063] p 107 A88-26212
- BELL, CHRISTOPHER**
Computer technologies and institutional memory p 55 N89-20062
- BELL, J. L.**
DTIC 2000: A corporate plan for the future [AD-A143900] p 6 N84-34327
- BEHATAR, G.**
An aide for instruction on integrative engineering design and support p 50 A89-12179
- BENKOVITZ, C. M.**
Data integration for a scientific field experiment [DE87-011302] p 74 N87-30211
- BENNETT, K.**
Design of graphic displays in computerized systems [AD-A181890] p 71 N86-24227
- BENSON, A.**
Advanced Technology Unit Training and Management System (ATUTMS). User's guide [NASA-CR-176843] p 71 N86-22130
- BERGEN**
Sector suite man-machine functional capabilities and performance requirements [AD-A148881] p 52 N85-19647
- BERGMAN, D.**
Space station integrated propulsion and fluid systems study [NASA-CR-179393] p 75 N89-12581

- BERKBIGLER, K. P.**
Applying expertise to data in the Geologist's Assistant expert system [DE89-003483] p 44 N89-20574
- BERKOWITZ, S.**
A management workstation concept [AD-A145617] p 83 N85-11906
- BERNSTEIN, H. J.**
Acquisition, use and archiving of real-time data [DE86-014789] p 25 N87-18282
- BERRA, P. BRUCE**
Computer architecture for a surrogate file to a very large data/knowledge base p 91 A87-34522
Computer architectures for very large knowledge bases p 41 N89-12294
- BERTIN, F. M.**
Fundamentals of computer security [DE84-011478] p 108 N84-31889
- BESEN, STANLEY M.**
New technologies and intellectual property: An economic analysis [N-2801-NSF] p 114 N86-10695
- BEZDEK, J. C.**
A knowledge based system approach to document retrieval p 32 A87-16706
- BHARWANI, SERAJ**
On designing a case-based system for expert process development p 45 N89-24847
- BICKNELL, B.**
Space station integrated propulsion and fluid systems study [NASA-CR-179393] p 75 N89-12581
- BICKNER, L.**
Security engineering of secure ground stations p 105 A85-42596
- BIGHAM, J.**
Space Station Information System integrated communications concept [AIAA PAPER 87-2226] p 18 A87-48606
- BIGHAM, J., JR.**
Space Station Information System requirements for integrated communications [AIAA PAPER 87-2229] p 16 A87-48607
- BICKSON, T. K.**
Interactive information environments: A plan for enabling interdisciplinary research [RAND/N-2115] p 6 N84-33284
- BILLINGSLEY, F. C.**
Concepts for a global resources information system p 16 A86-20668
- BINKOWSKI, EDWARD S.**
Satellite information systems p 19 A88-55015
- BINSTED, R. A.**
EDITSPEC: A FORTRAN 77 program for editing and manipulating spectral data from the Vassar CARY 2390 UV-VIS-NIR spectrophotometer [AD-A200352] p 29 N89-16389
- BISHOP, M.**
Access control and privacy in large distributed systems [AIAA PAPER 86-2781] p 106 A87-18661
Access control and privacy in large distributed systems [NASA-TM-89397] p 110 N86-29568
- BISWAS, G.**
A knowledge based system approach to document retrieval p 32 A87-16706
- BIXBY, R. L.**
The flow of scientific and technical information in the US Army Research Laboratories [AD-A155050] p 9 N85-33043
- BIXBY, RANDY L.**
DTIC (Defense Technical Information Center) model action plan for incorporating DGIS (DOD Gateway Information System) capabilities [AD-A181102] p 98 N87-27551
DoD Gateway Information System (DGIS) common command language: The first prototyping and the decision for artificial intelligence [AD-A185950] p 39 N88-15725
- BLACK, DAVID C.**
Scientific customer needs - NASA user [AIAA PAPER 87-2196] p 49 A87-48582
- BLACKBURN, C. L.**
An aide for instruction on integrated engineering design and support p 50 A89-12179
- BLANCHARD, MARY**
Automated knowledge base development from CAD/CAE databases p 43 N89-15585
- BLANCHARD, R. F.**
Guide to the development of a human factors engineering data retrieval system [AD-A136918] p 51 N84-20187
- BLASDEL, A. N.**
An approach to autonomous attitude control for spacecraft [AAS PAPER 88-004] p 33 A89-20833
- BOARDMAN, THOMAS J.**
Computer Science and Statistics: Proceedings of the 18th Symposium on the Interface [AD-A191296] p 28 N89-13901
- BOCK, FREDERICK MAXIMILLIAN, IV**
Decision-oriented strategic planning for information systems. Applying conceptual models of crisis decision-making to strategic planning for crisis management decision support systems p 15 N89-12486
- BOCK, L. K.**
An evaluation of two reliability and maintainability information systems [AD-A143438] p 58 N84-33290
- BODEN, T. A.**
Guidelines for exchanging computerized information [DE88-004736] p 13 N86-18510
- BOEHM-DAVIS, DEBORAH**
The effects of different data base formats on information retrieval p 58 A88-35463
- BOETTCHER, K. L.**
Modeling and analysis of teams of interacting decisionmakers with bounded rationality p 57 A84-21644
- BOFF, K. R.**
Automated Information Management Technology (AIM-TECH): Considerations for a technology investment strategy [AD-A181139] p 38 N86-20173
- BOGER, D. C.**
Federal information systems management: Problems, solutions and more problems [AD-A171386] p 11 N87-13353
- BOHLIN, RALPH C.**
IUE archived spectra [NASA-TM-100715] p 101 N89-15829
- BOHNE, A. R.**
The Remote Atmospheric Probing Information Display (RAPID) system [AD-A196314] p 75 N89-10500
- BOLDON, P.**
Technical and management information system. The tool for professional productivity on the space station program p 84 N86-15171
- BOLLINGER, W. A.**
An online directory of databases for material properties [DE84-013210] p 68 N84-33099
Post-processing of bibliographic citations from DOE/Recon, NASA/Recon, and DOD/DROLS [DE85-000517] p 93 N85-20938
- BONCZEK, R. H.**
Developments in decision support systems p 57 A85-31792
- BONO, T. L.**
Mechanized contract document preparation and abstract system [AD-P002750] p 4 N84-23297
- BOOKER, M. K.**
Documentation of materials data for computer storage and retrieval [DE86-009509] p 72 N87-11493
- BORGMAN, C. L.**
The user's mental model of an information retrieval system: Effects on performance p 5 N84-32275
- BOSLEY, JOHN**
A shared world conceptual model for integrating space station life sciences telepresence operations p 55 N86-30333
- BOULTER, T. W.**
Why solid modeling? p 32 A85-18437
- BOURELY, MICHEL**
Legal problems posed by the commercialization of data collected by the European Remote Sensing Satellite ERS-1 p 113 A89-33030
- BOWEN, KENNETH A.**
Knowledge base maintenance using logic programming methodologies p 42 N89-12295
- BOWLING, ALAN**
Deep space network resource scheduling approach and application p 86 N89-10070
- BOYLESS, J. A.**
Management information systems: A need for human factors [AD-P003313] p 51 N84-28452
- BOYNTON, J. G.**
The creation of a central database on a microcomputer network [AD-A143875] p 21 N84-43326
- BRAHNEY, J. H.**
Guidance, navigation, and control for 21st century aircraft p 1 A86-34194
- BREAZEALE, W. L.**
Search and retrieval of office files using dBASE 3 [NASA-TM-86550] p 10 N86-30378
- BRENDER, MARK E.**
Remote sensing and the First Amendment p 113 A88-19830
- BRICE, RICHARD S.**
I/O buffer performance in a virtual memory system [NASA-CR-185730] p 32 N89-71335
Performance of a data base management system with partially locked virtual buffers [NASA-CR-185729] p 90 N89-71336
- BROCK, G. H.**
Intercenter Problem Reporting and Corrective Action System (PRACAS) p 3 N84-21408
The administrative window into the integrated DBA's p 82 N84-33270
Office automation: The administrative window into the integrated DBMS p 9 N86-15174
- BRODE, ROGER W.**
Meteorological processor for regulatory models (MPRM-1.1) user's guide [PB89-127526] p 78 N89-22186
- BROOKS, A. A.**
User's guide for an IBM PL/I implementation of the international standard organization DIS 8211 information processing specification for a data descriptive file for information interchange [ORNL/CSD-TM-207] p 6 N84-34188
Description of a tentative US-USSR common communications format [DE86-004678] p 96 N86-25681
- BROOKS, P.**
Human engineering guidelines for management information systems: Change 1 [AD-A137808] p 81 N84-21104
- BROUARD, S. E.**
The use and value of Defense Technical Information Center products and services [AD-A130805] p 92 N84-11061
- BROWN, BECKY J.**
Concept for a satellite-based global reserve monitoring system p 66 A89-41152
- BROWN, G. W.**
Information processing for better utilization: Assessing the CLER model as organizer for innovation diffusion and planned change information reported in selected studies in the ERIC system p 93 N85-12780
- BROWN, JAMES W.**
Data access for scientific problem solving p 19 A86-20252
- BRUCE**
Sector suite man-machine functional capabilities and performance requirements [AD-A148681] p 52 N85-19647
- BRUGEL, EDWARD W.**
A multi-spectral analysis system using large databases p 58 A89-27177
- BRUSKE, S. Z.**
Potential uses of probabilistic risk assessment techniques for space station development p 104 A85-42595
- BRUZEWICZ, ANDREW J.**
Use of a geographic information system (GIS) to improve planning for and control of the placement of dredged material p 66 A89-41157
- BRYANT, R.**
Information Systems development aids [DE85-016161] p 10 N86-18246
- BUCKLEY, W. M.**
Design and development of a data base for spectral data and analysis results [DE87-011323] p 74 N88-11564
- BUDOWSKY, DONALD S.**
Strategic planning process at the National Technical Information Service p 12 N87-26680
- BUJA, ANDREAS**
A data viewer for multivariate data p 28 N89-13921
- BULETZA, P. G.**
Development of a computer-managed readiness assessment system [AD-A162931] p 1 N86-24215
- BUNDY, D. L.**
Coping with legacy factors p 19 A89-12176
- BUND, W. C.**
The NC (Numerically Controlled) assistant: Interfacing knowledge based manufacturing tools to CAD/CAM systems [DE88-016742] p 42 N89-14708
- BURK, K. W.**
Hanford meteorological station computer codes: Volume 9: The quality assurance computer codes [DE89-008414] p 78 N89-22295

- BURKHART, BRENDA**
The evaluation and extension of TAE in the development of a user interface management system p 53 N87-23158
- BURNETT, O. J.**
Adjusting legal regimes to new commercial realities p 112 A86-34121
- BURNHAM, G. O.**
Integrated Terrain Access/Retrieval System p 62 A85-44992
- BURNS, R. W.**
Security implications of the Space Station information system p 104 A85-42593
- BURR, RICHARD M.**
NASA scientific and technical information system study p 104 N89-70333
- BURSTEIN, MARK**
KREME (Knowledge Representation, Editing and Modeling Environment) A user's introduction, phase 1 [AD-A188906] p 39 N88-20052
- BURTON, H. D.**
Bibliographic post-processing with the TIS Intelligent Gateway: Analytical and communication capabilities [DE85-018153] p 95 N86-18245
- BUTCH, JOY LEE**
Space station Platform Management System (PMS) replanning using resource envelopes p 86 N89-10071
- BUSHNELL, D. S.**
Technology transfer at OARPA The Defense Advanced Research Projects Agency Executive summary [AD-A164503] p 10 N86-27110
- BUTERA, M. KRISTINE**
A proposed Applications Information System: Concept, implementation, and growth [IAF PAPER 87-156] p 64 A88-15906
- BUTRYM, KENNETH P.**
CD-ROM (Compact Disc Read Only Memory) library of the future [AD-A197943] p 100 N89-14702
- BUYUKONER, B.**
Design and implementation of a personnel database [AD-A159388] p 70 N86-16917
- BYKAT, ALEX**
SIRE: A Simple Interactive Rule Editor for NICBES p 78 N89-21730
- CAHN, DAVID F.**
Application of new technologies to OTIC document processing [AD-A189778] p 99 N88-22823
- CALMES, A.**
National Archives and Records Service (NARS) twenty year preservation plan [PB85-177640] p 84 N85-29854
- CAMPBELL, WILLIAM J.**
The development of an intelligent user interface for NASA's scientific databases p 48 A87-28445
Automated cataloging and characterization of space-derived data p 91 A89-21812
The development of a prototype intelligent user interface subsystem for NASA's scientific database systems [NASA-TM-87821] p 53 N87-24098
Intelligent data management p 53 N87-29132
The intelligent user interface for NASA's advanced information management systems p 39 N88-16424
Automated cataloging and characterization of space-derived data p 13 N88-30354
The utilization of neural nets in populating an object-oriented database p 45 N89-26599
- CAMPOS, P. E.**
Influences on group productivity 2 Factors inherent in the person A bibliographic synopsis [AD-A131015] p 50 '84-15790
- CAPONIO, JOSEPH F.**
Strategic planning process at the National Technical Information Service p 12 N87-26680
Identifying users and how to reach them p 102 N89-23370
- CARBONELL, J. G.**
Metaphor and common-sense reasoning [AD-A131422] p 35 N84-11756
Machine learning Part 1 A historical and methodological analysis [AD-A131424] p 36 N84-11824
- CARD, DAVID N.**
The Software Engineering Laboratory [NASA-CR-183455] p 89 N89-71121
- CARD, STUART K.**
The model human processor: An engineering model of human performance p 49 A87-33532
- CARLSON, J. B.**
Design and development of a database for spectral data and analysis results [DE87-011323] p 74 N88-11564
- CARLSSON, M.**
Practical issues relating to the internal database predicates in an OR-parallel prolog: Extensions and useful hacks [DE88-010019] p 27 N89-13174
- CARNAHAN, RICHARD S., JR.**
A rapid prototyping/artificial intelligence approach to space station-era information management and access p 46 N89-26600
- CARNES, JAMES R.**
Foundation: Transforming data bases into knowledge bases p 39 N88-16423
- CARPENTER, PATRICIA A.**
The role of working memory in language comprehension [AD-A192721] p 54 N88-26805
- CARR, DANIEL B.**
Experiences with a data analysis management prototype p 60 N89-13918
- CARSON, N.**
Design of a scientific information collation and dissemination system, volumes 1 thru 3 [AD-A146002] p 69 N85-12791
- CASADABIAN, CYPRIAN**
Case-based reasoning: The marriage of knowledge base and data base p 43 N89-15574
- CASSANDRAS, CHRISTOS G.**
Resource contention management in parallel systems [AD-A206809] p 32 N89-28332
- CASTORE, GLEN**
A Distributed Sensor Architecture for advanced aerospace systems p 34 A89-26960
- CAUDLE, SHARON L.**
Federal information resources management: Bridging vision and action p 15 N89-12488
- CHAFE, H. D.**
Experience, methods and prospects in commercial online materials data distribution p 63 A87-13182
- CHAKRABARTI, SUPRIYA**
Astronomical data analysis from remote sites p 3 A89-27210
- CHAMIS, ALICE**
Experiments on the cognitive aspects of information seeking and information retrieving [PB87-157699] p 38 N87-24739
- CHAN, ARVOLA**
A database management capability for Ada p 77 N89-16371
- CHANDRASEKARAN, B.**
Distributed knowledge base systems for diagnosis and information retrieval [AD-A170830] p 38 N87-15026
- CHANG, WON SON**
Functional description and formal specification of a generic gateway [AD-A206581] p 31 N89-26776
- CHAPMAN, J. S.**
A process activity monitor for AOS/VS [NASA-TM-86535] p 109 N86-19950
- CHARNY, LEONID**
Satisficing decision-making in supervisory control, part 2 [AD-A174631] p 59 N87-2028
- CHASE, ROBERT R. P.**
A systems approach to the design of the Eos data and information system p 64 A87-53207
Toward a complete EOS data and information system p 66 A89-941
- CHASTAIN, GEORGE E. C.**
Systematic corporate planning at OTIC (Defense Technical Information Center) [AD-A171525] p 11 N87-15902
- CHATBURN, C. C.**
Network information management subsystem p 22 N85-27106
- CHEADLE, J. M.**
Intel DIS evaluation [DE85-003748] p 83 N85-23451
- CHEN, H. H.**
Access path optimization for network database retrieval p 94 N85-27749
- CHEN, PEHONG**
Multiple representation document development [AO-A197369] p 76 N89-13205
- CHEN, ZHENGKIN**
Problem solving as intelligent retrieval from distributed knowledge sources p 39 N88-16392
- CHEUNG, CYNTHIA Y.**
NASA astrophysical data system (AOS) study p 81 A89-27239
- CHIGNELL, M. H.**
Knowledge-based load leveling and task allocation in human-machine systems p 53 N86-32985
- CHIRICO, R. D.**
Thermodynamics of materials in the range C10-C16 data base reference manual [DE88-001244] p 76 N89-16018
- CHRISTENSEN, S. W.**
Guidelines for exchanging computerized information [DE88-004736] p 13 N88-18510
- CHU, ROSE W.**
A survey of intelligent tutoring systems: Implications for complex dynamic systems p 56 N89-20697
- CHUM, FRANK Y.**
USL/OBMS NASA/RECON working paper series. Standards [NASA-CR-184508] p 87 N89-14948
General specifications for the development of a USL/OBMS NASA/PC R and O distributed workstation [NASA-CR-184538] p 15 N89-14978
- CHUNG, SOON MYOUNG**
Computer architecture for a surrogate file to a very large data/knowledge base p 91 A87-34522
- CITERLEY, R. L.**
Application of new technologies to OTIC document processing [AD-A189778] p 99 N88-22823
- CLANCEY, W. J.**
The advantages of abstract control knowledge in expert system design [AD-A139978] p 36 N84-25370
- CLARK, B. E.**
The specification and design of a system using computer-aided software engineering and performance analysis tools [AIAA PAPER 88-4410] p 19 A88-51934
- CLARK, NANCY**
The language of data: A general theory of data p 86 N89-13312
- CLAY, DEANNA**
Effects of display proximity and memory demands on the understanding of dynamic multidimensional information p 48 A87-33044
- CLEVER, J. J.**
Considerations in developing a comprehensive computer security support database system [DE87-005527] p 110 N87-23151
- CLIFFORD, T.**
The AGS Booster control system [DE88-013990] p 28 N89-14068
- CLINARD, J. A.**
Approaching distributed database applications using a programmable terminal emulator [DE89-014831] p 31 N89-28308
- CLINKSCALES, W. A.**
GSA automated information security [PMS-P-210C 1] p 111 N85-72650
- COOY, W. J.**
ELEFUNT test results under FORTRAN-PLUS on the active memory technology OAP 510-8 [DE88-017264] p 28 N89-14700
- COHEN, AARON**
Use of artificial intelligence in supervisory control p 44 N89-20694
- COHEN, MARVIN S.**
A personalized and prescriptive decision aid for choice from a database of options [AD-A188726] p 59 N88-20820
- CONNOLLY, T.**
Information search in judgment tasks: The effects of unequal cue validity and cost [AD-A141712] p 5 N84-29437
- COOK, C. R.**
The acquisition management information system: Friend or foe? [AO-P002751] p 67 N81-23298
- COOPER, GREGORY T.**
Concurrent Image Processing Executive (CIPE) [NASA-CR-185460] p 31 N89-25619
- COOPER, J. C.**
EDITSPEC: A FORTRAN 77 program for editing and manipulating spectral data from the Vanan CARY 2390 UV-VIS-NIR spectrophotometer [AD-A200352] p 29 N89-16389
- CORDLE, V. M.**
The function of report components in the screening and reading of technical reports p 90 A84-45547
- COREY, STEPHEN M.**
A rapid prototyping/artificial intelligence approach to space station-era information management and access p 46 N89-26600
- COTE, ROBERT G.**
Walter user's manual (Version 1.0) [AO-A192542] p 55 N88-28644

- COTTER, G. A.**
Integrated bibliographic information system: Integrating resources by integrating information technologies [AD-A157700] p 95 N86-15211
The integrated bibliographic information system: Resource sharing tailored for local needs [AD-A161700] p 95 N86-21431
The DOD gateway information system [AD-A161701] p 96 N86-21432
The DoD gateway information system: Prototype experience [AD-A166200] p 97 N86-30570
The Shared Bibliographic Input Network (SBIN): A summary of the experiment [AD-A133001] p 104 N84-75065
- COTTER, GLADYS**
Information retrieval systems evolve—advances for easier and more successful use p 100 N86-30482
- COTTER, GLADYS A.**
The DOD gateway information system directory of resources [AD-A174154] p 25 N87-16658
The Scientific and Technical Information Network (STINET): Foundation for evolution [AD-A189750] p 99 N86-22822
- COVE, N. B.**
Description of a tentative US-USSR common communication format [DE86-004676] p 96 N86-25681
- COWLEY, PAULA J.**
Experiences with a data analysis management prototype p 60 N89-13918
- CRANDALL, KAREN S.**
Laboratory Information Management System (LIMS): A case study [NASA-TM-100635] p 26 N86-21687
- CRITCHFIELD, ANNA**
Space station Platform Management System (PMS) replanning using resource envelopes p 86 N89-10071
- CROFT, W. BRUCE**
Plan recognition, knowledge acquisition, and explanation in an intelligent interface p 42 N89-13191
- CROMP, ROBERT F.**
The utilization of neural nets in populating an object-oriented database p 45 N89-26599
An intelligent user interface for browsing satellite data catalogs p 79 N89-26601
- CROOK, SHARON**
An intelligent user interface for browsing satellite data catalogs p 79 N89-26601
- CRUTCHER, J. W.**
Life cycle management handbook [DE89-004315] p 15 N89-17545
- CULWICK, B.**
The AGS Booster control system [DE88-013990] p 28 N89-14068
- CUMMING, R. C.**
GPS/JTIDS compatibility p 63 A87-13537
- CURLEE, T. R.**
The success or failure of management information systems: A theoretical approach [DE87-007802] p 85 N87-24233
- CURRY, R. E.**
An architecture for intelligent interfaces - Outline of an approach to supporting operators of complex systems p 48 A87-16818
- CUTTS, DANNIE E.**
Foundation: Transforming data bases into knowledge bases p 39 N88-16423

D

- DACUS, JIM**
Advanced helicopter cockpit information management p 49 A88-35376
- DAFT, R.**
Organizations as information processing systems
Environmental characteristics, company performance and chief executive scanning: an empirical study [AD-A168035] p 10 N86-33201
- DAFT, R. L.**
Organization as information processing systems: Toward a model of the research factors associated with significant research outcomes [AD-A168018] p 10 N86-33200
- DALBELLO, RICHARD**
Gathering news from space p 113 A88-19831
- DALE, V. H.**
Guidelines for exchanging computerized information [DE88-004736] p 13 N88-18510
- DAMOS, D. L.**
Subjective workload and individual differences in information processing abilities [SAE PAPER 841491] p 47 A86-2411

- DANBERG, SY**
A database management capability for Ada p 77 N89-16371
- DANHOFF, K.**
Practical issues relating to the internal database predicates in an OR-parallel prolog: Extensions and useful tricks [LJ88-010019] p 27 N89-13174
- DAS, A.**
Planning actions in robot automated operations p 43 N89-15559
- DAVIS, JILL**
The Engineer Studies Center guide to research and data collection [AD-A189971] p 13 N88-23680
- DAVIS, JOHN S.**
The Environment for Application Software Integration and Execution (EASIE) version 1.0. Volume 1: Executive overview [NASA-TM-100573] p 61 N89-21538
- DAWES, ROBERT L.**
BIOMASSCOMP: Artificial neural networks and neurocomputers [AD-A200902] p 44 N89-19123
- DECOSTER, B. L.**
A comparative study of OCLC, Inc. and the Washington Library Network in twenty-nine Pacific Northwest academic libraries p 109 N86-15208
- DEERWESTER, S. C.**
The retrieval expert model of information retrieval p 37 N85-25003
- DEJONG, G.**
Artificial intelligence implications for information retrieval [AD-A131382] p 35 N84-11821
- DEMETS, R.**
Pilots wary of tactical information systems p 62 A85-41058
- DEMMEI, J.**
A project for developing a linear algebra library for high-performance computers [DE89-007501] p 78 N89-22374
- DEMURJIAN, S. A.**
The implementation of a multi-backend database system (MDBS). Part 4: The revised concurrency control and directory management processes and the revised definitions of inter-process and inter-computer messages [AD-A140874] p 21 N84-27453
Towards an ideal database server for office automation environments [AD-A148184] p 7 N85-17742
The architectural requirements and integration analysis of a database server for office automation [AD-A155517] p 8 N85-32825
- DENHAM, D. H.**
Assurance Program for Remedial Action (APRA) microcomputer-operated bibliography management system [DE85-008763] p 95 N86-18155
- DENTY, M. A.**
Success with Data Management 4 at the DOE Pinellas Plant [DE84-008021] p 82 N84-29802
- DES JARDINS, R.**
Data management standards for space information systems [AIAA PAPER 87-2205] p 2 A87-48590
- DIBATTISTA, JOHN D.**
NASA Information Sciences and Human Factors Program [NASA-TM-87569] p 53 N87-22410
- DICKINSON, BRADLEY W.**
Information capacity of associative memories p 20 A89-39603
- DILLAWAY, B. B.**
A practical design for a multilevel secure database management system [AIAA PAPER 86-2771] p 106 A87-18855
- DOBSON, CARL**
Astronomical data analysis from remote sites p 3 A89-27210
- DOBYNS, A.**
Recommended documentation for computer users at ANL [DE84-016285] p 7 N85-15434
- DOLBY, JAMES L.**
The language of data. A general theory of data p 86 N89-13912
- DOMIK, GITA**
A multi-spectral analysis system using large databases p 58 A89-27177
- DOMINICK, WAYNE D.**
USL/DBMS NASA/RECON working paper series Standard's [NASA-CR-184506] p 87 N89-14948

- Overview of the NASA/RECON educational, research, and development activities of the Computer Science Departments of the University of Southwestern Louisiana and Southern University [NASA-CR-184509] p 100 N89-14949
Concepts and implementations of natural language query systems [NASA-CR-184514] p 60 N89-14954
Knowledge based systems. A critical survey of major concepts, issues, and techniques [NASA-CR-184517] p 42 N89-14957
Knowledge based systems: A critical survey of major concepts, issues and techniques. Volumes [NASA-CR-184518] p 43 N89-14958
An innovative, multidisciplinary educational program in interactive information storage and retrieval. Presentation visuals [NASA-CR-184521] p 100 N89-14961
The design of PC/MIS, a PC-based common user interface to remote information storage and retrieval systems [NASA-CR-184523] p 55 N89-14963
The design of PC/MIS, a PC-based common user interface to remote information storage and retrieval systems. Presentation visuals [NASA-CR-184524] p 55 N89-14964
Natural language query system design for interactive information storage and retrieval systems. Presentation visuals [NASA-CR-184526] p 87 N89-14966
KARL: A Knowledge-Assisted Retrieval Language [NASA-CR-184529] p 43 N89-14969
An overview of the USL/DBMS NASA/PC R and D project working paper series [NASA-CR-184533] p 15 N89-14973
General specifications for the development of a USL NASA PC R and D statistical analysis support package [NASA-CR-184537] p 15 N89-14977
General specifications for the development of a USL/DBMS NASA/PC R and D distributed workstation [NASA-CR-184538] p 15 N89-14978
- DONGARRA, J.**
A project for developing a linear algebra library for high-performance computers [DE89-007501] p 78 N89-22374
- DOPKER, BERNHARD**
Developments in interdisciplinary simulation and design software for mechanical systems p 19 A89-26248
A large scale software system for simulation and design: optimization of mechanical systems p 30 N89-25219
- DOSHER, BARBARA ANNE**
Strategy and optimization in human information processing p 48 A87-33502
- DOUGAN, A. D.**
Design and development of a database for spectral data and analysis results [DE87-011323] p 74 N88-11564
- DOUGLAS, R. D.**
DTIC 2000: A corporate plan for the future [AD-A143900] p 6 N84-34327
How Ebenezer Scrooge and Peter Drucker are helping shape DoD's Scientific and Technical Information Program [AD-A165640] p 96 N86-28779
- DOUGLASS, R. J.**
Modeling the user in intelligent user interfaces [DE84-012664] p 50 N84-14795
- DOYLE, B.**
Human engineering guidelines for management information systems. Change 1 [AD-A137808] p 81 N87-21104
- DOYLE, STEPHEN E.**
International space plans and policies - Future roles of international organizations [IAF PAPER 88-622] p 113 A89-17871
- DRAKE, R.**
DOD (Department of Defense) Procedures for Management of Information Requirements [PB87-155495] p 12 N87-24227
- DREWS, MICHAEL L.**
Living in the past - Knowledge capture of evolving space systems [AIAA PAPER 89-0190] p 34 A89-25165
- DROPPA, J. G.**
Development of a micrometeorological and tracer data archive [PB87-110490] p 73 N87-19845
- DROTT, M. C.**
Evaluation of the National Library of Medicine's programs in the medical behavior sciences: Online searchers' reactions to database and vendor capabilities in the Medical Behavioral Sciences (MBS), study 4 [PB84-230523] p 93 N85-12796
- DUBE, R. P.**
Managing geometric information with a data base management system p 67 N84-22211

- DUBOIS, M. E., JR.**
Office automation. A look beyond word processing
[AD-A132784] p 36 N84-28670
- DUCROZ, J.**
A project for developing a linear algebra library for high-performance computers
[DE89-007501] p 78 N89-22374
- DUDLEY, MICHAEL**
Development and validation of an advanced low-order panel method
[NASA-TM-101024] p 75 N89-12554
- DUNHAM, JANET R.**
The specification and design of a system using computer-aided software engineering and performance analysis tools
[AIAA PAPER 88-4410] p 19 A88-51934
- DURBAN, D. M.**
Strategies for converting to a DBMS environment
p 5 N84-33267
- DURFEE, R. C.**
Air Force geographic information and analysis system
[DE88-001420] p 74 N88-18505
- DUTILLY, ROBERT**
Automation of spacecraft control centers
p 86 N89-10078
- DUTTON, J.**
University participation via UNIDATA, part 1
p 72 N86-29295
- DUTTON, JOHN A.**
The EOS data and information system - Concepts for design
p 65 A89-31939

E

- EBERHARDT, K. R.**
National Archives and Records Service (NARS) twenty year preservation plan
[PB89-177640] p 84 N85-29854
- ECUNG, M.**
The microcomputer in the acquisition environment
[AD-P002748] p 67 N84-23295
- EDMISTON, W. A.**
Peak power cost reduction guidebook
[NASA-CR-185020] p 17 N89-71009
- EDSON, MARK W.**
Information systems for shuttle processing - An enterprise approach
p 2 A88-52359
- EGERTON, D.**
The Remote Atmospheric Probing Information Display (RAPID) system
[AD-A196314] p 75 N89-10500
- EGGEMEYER, WILLIAM C.**
Deep space network resource scheduling approach and application
p 86 N89-10070
- EHRLHART, SUE A.**
A database management system for computer-aided digital circuit design
[AD-A206047] p 79 N89-24066
- ELKERTON, J.**
Information retrieval strategies in a file-search environment
p 90 A84-44092
- ELKIN, GABRIEL R.**
Link performance data management and analysis system users manual
[AD-A203605] p 88 N89-22356
- ELMAN, J. L.**
Interactive activation models of perception and comprehension
[AD-A161362] p 52 N86-21143
- EMRATH, P. A.**
Page indexing for textual information retrieval systems
p 93 N84-32277
- EMRICH, M. L.**
Information Systems development aids
[DE85-018161] p 10 N86-18246
- Increasing user-friendliness in AI systems**
[DE89-005093] p 56 N89-20704
- ENGLUND, EVAN J.**
GEO-EAS (Geostatistical Environmental Assessment Software) user's guide
[PB89-151252] p 89 N89-27261
- ERICKSON, JON D.**
Use of artificial intelligence in supervisory control
p 44 N89-20694
- ESCOBAR, D. E.**
Applications of multispectral video for natural resource assessment
p 65 A89-10968
- ESHELMAN, R. E.**
Editors rattle space
p 114 N86-10586
- ESTES, J. E.**
NASA pilot land data system
p 68 N84-31741
- Remote Sensing Information Sciences Research Group,
Santa Barbara Information Sciences Research Group, year 3
[NASA-CR-179769] p 72 N86-32863

- ESTES, JOHN E.**
Knowledge-based image data management - An expert front-end for the BROWSE facility
p 35 A89-41158
- EVANS, MICHAEL W.**
The software factory: A fourth generation software engineering environment
p 20 A89-48764
- EVERITT, J. H.**
Applications of multispectral video for natural resource assessment
p 65 A89-10968

F

- FALKOWSKI, THOMAS J.**
Planning and controlling the acquisition costs of Air Force information systems
[AD-A204421] p 16 N89-22528
- FARRELL, M. P.**
Carbon Dioxide Information Center FY 1985
[DE85-004654] p 72 N86-26245
- FEERTAG, R. J.**
Security concepts for microprocessor based key generator controllers
[AD-A155194] p 111 N85-74089
- FELIPPA, CARLOS A.**
The computational structural mechanics testbed architecture. Volume 1: The language
[NASA-CR-178384] p 76 N89-14472
- Application developer's tutorial for the CSM testbed architecture
[NASA-CR-181732] p 60 N89-14473
- The computational structural mechanics testbed architecture. Volume 2: The interface
[NASA-CR-178385] p 76 N89-15435
- The computational structural mechanics testbed architecture. Volume 4: The global-database manager GAL-DBM
[NASA-CR-178387] p 76 N89-16195
- The computational structural mechanics testbed architecture. Volume 2: Directives
[NASA-CR-178385] p 78 N89-22133
- FERGUSON, GORDON J.**
A hypertext writing environment and its cognitive basis
[AD-A188179] p 54 N88-18298
- FERNANDEZ, J. P.**
A comparison of typical meteorological year solar radiation information with the SOLMET data base
[DE88-009242] p 75 N88-29247
- FEUDO, C. V.**
Modern hardware technologies and software techniques for on-line database storage and access
[AD-A164983] p 24 N86-26924
- FILTEAU, MARK C.**
Building maintainable large scale software systems - The measurable benefits of CASE technology
[AIAA PAPER 89-5051] p 20 A89-48162
- FISCELLA, J. M.**
Development of a proposed standard for the exchange of scientific microcomputer programs
[PB84-157940] p 4 N84-24244
- FLEGER, STEPHEN A.**
Advanced human factors engineering tool technologies
p 49 A88-35418
- Advanced human factors engineering tool technologies
[AD-A188390] p 54 N88-20825
- FLEISCHER, M.**
Implementing and managing change. A guide for assessing information technology
[DE88-000035] p 12 N88-11571
- FLYNN, G.**
Sector suite man-machine functional capabilities and performance requirements
[AD-A148881] p 52 N85-19647
- FONG, E. N.**
Reference model for DBMS (database management system) standardization
[PB85-225217] p 9 N86-16023
- Computer science and technology. Guide to distributed database management
[PB88-201561] p 27 N89-11621
- FOX, M. S.**
The role of databases in knowledge-based systems
[AD-A166365] p 38 N86-30573
- FOX, STEPHEN**
A database management capability for Ada
p 77 N89-16371
- FRANCA, Z. M. P. D. S.**
Strategies and mechanisms for the diffusion of scientific and technical information. A comparative study
p 92 N84-23406
- FRANK, DEBORAH L.**
The specification and design of a system using computer-aided software engineering and performance analysis tools
[AIAA PAPER 88-4410] p 19 A88-51934

- FRANKEL, R.**
The AGS Booster control system
[DE88-013990] p 28 N89-14068
- FRANKLIN, J.**
NASA pilot land data system
p 68 N84-31741
- FREEDY, A.**
Intelligent interfaces for human control of advanced automation and smart systems
p 47 A86-21889
- FRENCH, J. C.**
Implementation of a hypercube database system
[DE89-010474] p 88 N89-26413
- FRIEDMAN, DAVID M.**
Risk assessment of compressed natural gas-fueled vehicle operations, phase 1
[PB89-186841] p 104 N89-27196
- FRISCH, ALAN M.**
Knowledge retrieval as specialized inference
[AD-A189042] p 39 N88-20899
- FRISCH, HAROLD P.**
The integrated analysis capability (IAC Level 2.0)
p 19 A89-12180
- FUCHS, RON**
Status of DOE information network modifications
[DE89-005191] p 101 N89-20028
- FULKER, D. W.**
University participation via UNIDATA, part 2
p 72 N86-29296
- FULLER, C. R.**
Integrated structural analysis for rapid design support
p 18 A88-18630
- FULTON, R. E.**
An aide for instruction on integrated engineering design and support
p 50 A89-12179

G

- GADBOIS, L. E.**
An asynchronous interface between a natural language query interpreter and a database management system
[AD-A206918] p 57 N89-26779
- GALLAGHER, MARY C.**
An innovative, multidisciplinary educational program in interactive information storage and retrieval. Presentation visuals
[NASA-CR-184521] p 100 N89-14961
- GAMAL-ELDIN, M. SAMY MOHAMED**
Global updates in integration of distributed databases
p 29 N89-15773
- GARCIA, A. A.**
Livermore risk analysis methodology. A quantitative approach to management of the risk associated with the operation of information systems
[DE87-006828] p 110 N87-24232
- GARMAN, J. R.**
Improving management decision processes through centralized communication linkages
p 58 N86-15175
- GARRITY, PATRICK J.**
United States space policy. Review and assessment
[DE88-015538] p 115 N89-13306
- GARVEY, C. E.**
Multilevel data store design
[AIAA PAPER 86-2772] p 106 A87-18856
- GAULT, B. C.**
Keeping track of archived drawings. A case study
[DE86-003129] p 71 N86-24572
- GAYLE, D.**
Technology transfer for development of coastal zone resources. Caribbean experts examine critical issues
p 77 N89-18749
- GAYNOR, C. A.**
An online directory of databases for material properties
[DE84-013210] p 68 N84-33099
- International information networks for material properties: Revision 1
[DE85-007412] p 22 N85-27572
- GEASLEN, W. D.**
Potential uses of probabilistic risk assessment techniques for space station development
p 104 A85-42595
- GEDDES, N. D.**
An architecture for intelligent interfaces - Outline of an approach to supporting operators of complex systems
p 48 A87-16818
- GEER, CHARLES W.**
NASA-STD-3000, Man-System Integration Standards - The new space human engineering standards
[IAF PAPER 87-550] p 49 A88-16167
- GEOFFRION, ANDREW M.**
Reusing structured models via model integration
[AD-A204652] p 30 N89-22369
- GERMAN, E. S., JR.**
NASA metrology information system. A NEMS subsystem
p 68 N84-33279

GEY, F. C.

- A user's guide to the socioeconomic environmental demographic information system (SEEDIS)
[AD-A168917] p 73 N87-12388
- GHAFARI, A. K.
A design methodology for on-line menu-driven information retrieval systems p 96 N86-24558
- GIFFORD, DAVID K.
Walter user's manual (Version 1.0)
[AD-A192542] p 55 N88-28644
- GILBERT, E.
Bangladesh Agro-Climatic Environmental Monitoring Project p 79 N89-28121
- GILLIGAN, J.
Technology assessment: Methods for measuring the level of computer security
[PB86-129954] p 110 N86-25140
- GIRAGOBAN, P. A.
Guidelines for certification of existing sensitive systems
[NASA-CR-174080] p 111 N85-70325
- GIRILL, T. R.
Display units for online passage retrieval. A comparative analysis
[DE84-001004] p 92 N84-25369
Towards automated consulting: Design feedback from the performance of online documentation
[DE87-012243] p 99 N88-13062
- GIROUARD, R.
DLA: Data/data base administration analysis
[AD-A153031] p 6 N85-28879
- GLASSMIRE, M. E.
Intel IDIS evaluation
[DE85-003748] p 83 N85-23451
- GLIGOR, V. D.
Interconnecting heterogeneous database management systems p 18 A84-41197
- GNACEK, ANNE-MARIE
A data analysis expert system for large established distributed databases p 33 A89-11718
- GOEL, AMRIT L.
An experimental investigation into software reliability
[AD-A206293] p 30 N89-24069
- GOFFORTH, ANDRE
Advanced data management design for autonomous telebot systems in space using spaceborne symbolic processors p 41 N89-10096
- GOLDBERG, JACK
An evaluation methodology for dependable multiprocessors
[AD-A192799] p 26 N88-26863
- GOLDBERG, MICHAEL
Automated cataloging and characterization of space-derived data p 91 A89-21812
Automated cataloging and characterization of space-derived data p 13 N88-30354
- GOLDBERG, THOMAS R.
U.S. government policies and hypersonic flight in the 21st century p 3 A89-41654
- GOLDFINE, A.
Technical overview of the information resource dictionary system
[PB85-224491] p 9 N86-18004
- GOODMAN, N.
Influences on group productivity 2: Factors inherent in the person. A bibliographic synopsis
[AD-A131015] p 50 N84-15790
- GORAN, W. D.
An interactive social information system. Users manual
[AD-A133480] p 66 N84-16078
- GORNEY, D. J.
Spacecraft environmental anomalies expert system p 43 N89-15607
- GOROVE, STEPHEN
Man-made space debris. Data needed for rational decision p 2 A89-12107
- GOVE, N. B.
Open systems interconnection for the defence community p 20 N84-21426
- GRADY, D. E.
Sandia computerized shock compression bibliographical database
[DE85-018542] p 70 N86-17222
- GRAF, VIRGIL A.
Human factors impact on the V-22 Osprey cockpit development - An overview p 50 A89-18865
- GRAHAM, MARC H.
ISTAR evaluation
[AD-A201345] p 87 N89-19903
- GRAHAM, R. A.
Sandia computerized shock compression bibliographical database
[DE85-018542] p 70 N86-17222
- GRANT, J.
Logical optimization for data base uniformization
[NASA-CR-173836] p 5 N84-32282

GRATTIDGE, W.

- Prototype material properties data network
[NASA-TM-89243] p 24 N86-33206
- Materials Information for Science and Technology (MIST) Project overview: Phase 1 and 2 and general considerations
[DE87-006760] p 73 N87-23312
- GRAVES, HENSON
Intelligent data management p 86 N89-13913
- GRAY, T. E.
A model for the containment of computer viruses
[AIAA PAPER 86-2759] p 105 A87-18853
- GREEN, J.
Network access to PCDS (SPAN, ESN, SESNET, ARPANET) p 24 N88-29297
- GREEN, J. L.
Introduction to the Space Physics Analysis Network (SPAN)
[NASA-TM-86499] p 22 N85-24196
- GREEN, JAMES L.
Space data management at the NSSDC (National Space Science Data Center) Applications for data compression p 102 N89-22334
- GREEK, R. O.
Management information system for engineering
[DE84-001655] p 81 N84-14964
- GRIEDER, A.
A project for developing a linear algebra library for high-performance computers
[DE89-007501] p 78 N89-22374
- GRIER, R.
Videotex premastering facility: Technical evaluation
[PB84-135621] p 20 N84-20640
- GRIESS, W.
Multi-level security for computer networking - SAC digital network approach p 18 A85-14469
- GRIFFIN, A. F.
Intelligent information retrieval from on-line technical documentation
[AD-P003946] p 37 N85-11626
- GRIFFIN, R. W.
Organization as information processing systems: Toward a model of the research factors associated with significant research outcomes
[AD-A168018] p 10 N86-33200
- GRIFFITH, B. C.
Evaluation of the National Library of Medicine's program in the medical behavior sciences. Online searches' reactions to database and vendor capabilities in the Medical Behavioral Sciences (MBS), study 4
[PB84-230523] p 93 N85-12798
- GRIFFITHS, J. M.
Measuring the value of information and information systems, services and products p 97 N86-28799
- GRIFFITHS, JOSE-MARIE
Evaluating the effectiveness of information use p 14 N89-11626
Evaluating the performance of information centre staff p 14 N89-11629
Evaluating performance of information centre operations and services p 14 N89-11630
A framework for evaluating the effectiveness of information centres and services p 14 N89-11631
- GROGAN, S.
Project FIRST (Faculty Information and Research Service for Texas) technical description of project and results
[PB84-161629] p 67 N84-24501
- GROOM, STEVEN L.
Concurrent Image Processing Executive (CIPE)
[NASA-CR-185460] p 31 N89-25619
- GROSZ, B. J.
Research on interactive acquisition and use of knowledge
[AD-A137436] p 36 N84-20270
- GROW, GERALD R.
Problems of storing nonlinear documentation p 80 N88-70736
- GRUBB, DAVID-P.
Interactive access to scientific and technological factual databases worldwide
[DE88-016172] p 100 N89-14943
- GRYDER, R.
Implementing and managing change. A guide for assessing information technology
[DE88-000035] p 12 N88-11571
- GUARRO, S. B.
Livermore risk analysis methodology: A quantitative approach to management of the risk associated with the operation of information systems
[DE87-006828] p 110 N87-24232
- GUILE, B. R.
Information technologies and social transformation
[PB85-240521] p 71 N86-19263

GUNSHENAN, JOHN

- KREME (Knowledge Representation, Editing and Modeling Environment) A user's introduction, phase 1
[AD-A188906] p 39 N88-20062
- GUPTA, AMAR
Knowledge-based integrated information systems engineering: Highlights and bibliography. Knowledge-Based Integrated Information Systems Engineering (KBISE) Project, volume 1
[AD-A195850] p 40 N88-30449
Integrating images, applications, and communications networks, volume 5
[AD-A195854] p 26 N88-30452
Technical opinions regarding knowledge-based integrated information systems engineering, volume 8
[AD-A195857] p 40 N88-30454
Knowledge-Based Integrated Information Systems Development Methodologies Plan, Knowledge-Based Integrated Information Systems Engineering (KBISE) report, volume 2
[AD-A195851] p 41 N88-30455
Strategic, organizational and standardization aspects of integrated information systems, volume 6
[AD-A195855] p 14 N88-30457
Integrating distributed homogeneous and heterogeneous databases: Prototypes, volume 3
[AD-A195852] p 27 N89-10668
Object-oriented approach to integrating database semantics, volume 4
[AD-A195853] p 41 N89-10672
- GWINN, N. E.
Emerging issues on managing information resources p 17 N85-70762
- ## H
- HACHEM, NABIL I.
Computer architecture for a surrogate file to a very large data/knowledge base p 91 A87-34522
- HAIGH, J. T.
A practical design for a multilevel secure database management system
[AIAA PAPER 86-2771] p 106 A87-18855
- HALL, DANA L.
NASA space information systems overview
[AIAA PAPER 87-2189] p 63 A87-48577
Space Station Information System - Concepts and international issues
[IAF PAPER 87-78] p 64 A88-15851
- HALL, GARDNER
Integrated resource scheduling in a distributed scheduling environment p 80 A89-21808
- HALL, H. J.
Services for the analysis and evaluation of information
[PB84-104504] p 51 N84-18113
- HALL, PHILIP P.
The design of PC/MIS: A PC-based common user interface to remote information storage and retrieval systems
[NASA-CR-184523] p 55 N89-14963
The design of PC/MIS: A PC-based common user interface to remote information storage and retrieval systems. Presentation visuals
[NASA-CR-184524] p 55 N89-14964
- HALL, S. A.
Information theoretic models of memory in human decisionmaking models
[AD-P002883] p 51 N84-22844
- HAMILTON, W. P., III
Local automation model. System specification
[AD-A141503] p 92 N84-29798
- HAMMARLING, S.
A project for developing a linear algebra library for high-performance computers
[DE89-007501] p 78 N89-22374
- HAMMERLING, F. D.
User's guide for an IBM PL/I implementation of the international standard organization DIS 8211 information processing-specification for a data descriptive file for information interchange
[ORNL/CSD-TM-207] p 6 N84-34188
- HAMPPEL, V. E.
TIS: An intelligent gateway computer for information and modeling networks. Overview
[DE83-017966] p 20 N84-14067
An online directory of databases for material properties
[DE84-013210] p 68 N84-33069
Post-processing of bibliographic citations from DOE/Recon, NASA/Recon, and DOE/DROLS
[DE85-000617] p 93 N85-20938
Information information networks for material properties: Revision 1
[DE85-007412] p 22 N85-27572

- Integration of communications with the Intelligent Gateway Processor
[DE87-002386] p 25 N87-19981
- HAMPEL, VIKTOR E.**
Interactive access to scientific and technological factual databases worldwide
[DE88-016172] p 100 N89-14943
Fostering interaction of government, defense, and aerospace databases p 103 N89-23374
- HANCOCK, P. A.**
Knowledge-based load leveling and task allocation in human-machine systems p 53 N86-32985
- HANSEN, GREGORY A.**
Software process modeling
[AD-A197137] p 27 N89-13154
- HANSON, R. J.**
Algorithm 607 - Text exchange system. A transportable system for management and exchange of programs and other text p 18 A84-4325
- HANZEL, F. J.**
SAFEORD - Safety of explosive ordnance databank
[AD-A154058] p 70 N85-30972
- HARRIS, F. I.**
The Remote Atmospheric Probing Information Display (RAPID) system
[AD-A196314] p 75 N89-10500
- HARRIS, STEVEN G.**
Application of new technologies to DTIC document processing
[AD-A189778] p 99 N88-22823
- HARRISON, I.**
Post-processing of bibliographic citations from DOE/Recon, NASA/Recon, and DOD/OROLS
[DE85-000617] p 93 N85-20938
- HARRISON, MICHAEL A.**
Multiple representation document development
[AD-A197369] p 76 N89-13305
- HART, S.**
Memory and subjective workload assessment p 52 N86-32983
- HARTLEY, D. S., III**
Computer-aided research
[DE88-007771] p 54 N88-261
- HARTLEY, DEAN S., III**
Users manual for the Research Notes System (Version 1.5)
[DE89-001391] p 87 N89-15787
- HARTT, R. W.**
Local automation model. System specification
[AD-A141503] p 92 N84-29798
Integrated bibliographic information system. Integrating resources by integrating information technologies
[AD-A157700] p 95 N86-15211
Microcomputer-based local automation model. Functional description
[AD-A160610] p 95 N86-19002
The integrated bibliographic information system. Resource sharing tailored for local needs
[AD-A161700] p 95 N86-21431
Microcomputer-based local automation model. System planning guide
[AD-A168136] p 98 N87-11630
- HARTT, RICHARD W.**
Bibliographic networks and microcomputer applications for aerospace and defense scientific and technical information p 98 N87-19923
- HARWOOD, KELLY**
Effects of display proximity and demands on the understanding of dynamic multidimensional information p 48 A87-33044
- HATCHELL, B. K.**
An aide for instruction on integrated engineering design and support p 50 A89-12179
- HAUG, EDWARD J.**
A large scale software system for simulation and design optimization of mechanical systems p 30 N89-25219
- HAVELOCK, R. G.**
Technology transfer at DARPA. The Defense Advanced Research Projects Agency Executive summary
[AD-A164503] p 10 N86-27110
- HAYEN, A. A.**
Air Force Geophysics Laboratory management information system study
[AD-A161910] p 85 N86-24561
- HAYES, P.**
Automated RTOP management system p 82 N84-21406
- HAYES, S. P.**
A system for management, display and analysis of oceanographic, time series and hydrographic data p 65 A89-12863
- HAYNES, FREDERICK L.**
Identifying users and how to reach them p 102 N89-23370
- HEAP, SARA R.**
IUE archived spectra
[NASA-TM-100715] p 101 N89-15829
- HEDLIN, E.**
MARC (Machine Readable Catalog) format and life cycle tracking at the National Archives. A study
[PB87-126256] p 11 N87-21737
- HEGEMANN, S. E.**
Information information networks for material properties. Revision 1
[DE85-007412] p 22 N85-27572
- HEINZE, R. L.**
GPC/JTIDS compatibility p 63 A87-13537
- HENDERSON, M. M.**
Compilation of cooperative data element dictionary of five federal agencies' systems for processing of technical report literature
[AD-A130797] p 92 N84-11059
- HENDLER, JAMES**
Shared resource control between human and computer p 57 N89-26580
- HENDRICKS, D. E.**
Human engineering guidelines for management information systems. Change 1
[AD-A137808] p 81 N84-21104
- HENNEY, D. A.**
Air Force geographic information and analysis system
[DE89-001420] p 74 N88-18505
- HESTER, T.**
EXAMINE - An expert system to mediate human-computer dialogs p 47 A86-23740
- HETTINGER, E. C.**
Policy implications of information technology
[PB84-183219] p 5 N84-31060
- HEXMOOR, HENRY**
Artificial intelligence costs, benefits, and risks for selected spacecraft ground system automation scenarios p 33 A89-21803
- HILL, SCOTT E.**
The utilization of neural nets in populating an object-oriented database p 45 N89-26599
- HINKE, T. H.**
Secure database management system architectural analysis
[AIAA PAPER 86-2773] p 106 A87-18857
- HIRSCHMAN, LYNETTE**
Integrating syntax, semantics, and discourse. DARPA (Defense Advanced Research Projects Agency) natural language understanding program
[AD-A203747] p 101 N89-20677
- HOARD, JAMES E.**
Natural language processing and advanced information management p 88 N89-26602
- HODGE, J. E.**
Automated administrative data bases p 82 N84-21411
- HOETMER, G. J.**
Design of a scientific information collation and dissemination system, volumes 1 thru 3
[AD-A146002] p 69 N85-12791
- HOFFMAN, L.**
Technology assessment: Methods for measuring the level of computer security
[PB86-129954] p 110 N86-25140
- HOFFMAN, P. J.**
Man-machine systems of the 1990 decade. Cognitive factors and human interface issues
[AD-A163865] p 52 N86-25123
- HOGAN, PATRICK D.**
Satellite data management for effective data access p 64 A88-38690
- HOKANSON, J. C.**
Sandra computerized stock compression bibliographical database
[DE85-018542] p 70 N86-17222
- HOLCOMB, LEE B.**
NASA Information Sciences and Human Factors Program
[NASA-TM-87569] p 53 N87-22410
- HOLLAND, L. L.**
Laboratory technical information system analysis phase
[DE85-018311] p 95 N86-17219
- HOLLEY, CHARLES D.**
Human factors impact on the V-22 Osprey cockpit development - An overview p 50 A89-18865
- HOLT, ROBERT**
The effects of different data base formats on information retrieval p 58 A88-35463
- HOOD, CARROLL A.**
A proposed Applications Information System - Concept, implementation, and growth
[IAF PAPER 87-156] p 64 A88-15906
- HORTON, FOREST W., JR.**
Information resources management p 17 N89-23371
- HOSAPPLE, C. W.**
Developments in decision support systems p 57 A85-31792
- HOSENBALL, S. N.**
Space Shuttle, private enterprise and intellectual properties in the context of space manufacturing p 112 A84-22341
Legal considerations and cooperative opportunities for space commercial activities p 113 N85-11013
- HOSMER, DOUGLAS M.**
A pilot's view of intelligent systems p 50 A89-45294
- HOWELL, DAVID R.**
The Transportable Applications Environment - An interactive design-to-production development system p 50 A89-29067
- HOWES, NORMAN R.**
The TAVERNS emulator: An Ada simulation of the space station data communications network and software development environment p 76 N87-16366
- HSIAO, D. K.**
The implementation of a multi-backend database system (MDBS) Part 4. The revised control and directory management processes and the revised definitions of inter-process and inter-computer messages
[AD-A140874] p 21 N84-27453
Futura database machine architectures
[AD-A146786] p 22 N85-16481
Towards an ideal database server for office automation environments
[AD-A148184] p 7 N85-17742
The architectural requirements and integration analysis of a database server for office automation
[AD-A155517] p 8 N85-32825
- HUBBARD, R. V.**
Analysis of the use of Defense Technical Information Center resources by research and development centers and laboratories in the US Army
[AD-A168441] p 97 N86-33203
- HUBER, GEORGE P.**
A study of organizational information search, acquisition, storage and retrieval
[AD-A172063] p 98 N87-16650
- HUDSON, B. J.**
Electronic Records Administration at the Savannah River Plant
[DE87-014842] p 12 N88-12415
- HULTON, V. N.**
Implementation of multifunction information systems at three Navy facilities
[AD-A157797] p 84 N86-16153
- HUNG, CHAW-KWEI**
Knowledge-based network operations p 34 A89-33679
- HUNT, DOUGLAS B.**
Protecting sensitive systems and data in an open agency
[AIAA PAPER 87-3092] p 107 A88-26213
- HUNT, R. M.**
Human factors of intelligent computer aided display design p 47 A87-12216
- HURLEY, CATHERINE**
A data viewer for multivariate data p 28 N89-13921
- HUTSON, J. E.**
Applying expertise to data in the Geologist's Assistant expert system
[DE89-003463] p 44 N89-20574
- HWANG, K.**
VLSI architectures for pattern analysis and image database management p 20 N84-19163
- IBBOTT, T.**
Advanced Technology Unit Training and Management System (ATUTMS) User's guide
[NASA-CR-176643] p 71 N86-22130
- IGUCHI, STEVEN K.**
Development and validation of an advanced low-order panel method
[NASA-TM-101024] p 75 N89-12554
- IRWIN, JOHN S.**
Meteorological processor for regulatory models (MPRM-1.1) user's guide
[PB89-127526] p 78 N89-22188
- ISKANDAR, I. K.**
A user's guide for the BISOR program for the IBM-PC personal computer
[AD-A157936] p 94 N86-12995
- IVERSTINE, E. C.**
Managing microcomputers. A survival kit for functional managers
[AD-A144006] p 21 N84-34316

J

- JACK, R. F.**
Cost considerations in database selection - A comparison of DIALOG and ESA/IRS p 90 A84-45571
Idiot sheets - Preparing and using Database guide sheets p 90 A85-24514
An intermediary's perspective of online databases for local governments p 90 A85-24549
"Meatball searching" - The adversarial approach to online information retrieval p 90 A86-40659
- JACK, ROBERT F.**
Searching the PASCAL database - A user's perspective p 92 A89-45650
- JACKSON, M. E.**
On designing a case-based system for expert process development p 45 N89-24847
- JACOBS, B. E.**
Method for accessing distributed heterogeneous databases p 67 N84-21412
- JACOBSON, CAROL E.**
Proceedings of the 2nd Conference on Computer Interfaces and Intermediaries for Information Retrieval [AD-A174000] p 53 N87-16657
The DOD gateway information system directory of resources [AD-A174154] p 25 N87-16658
- JACOBSON, K. J.**
An assessment of CD ROM (Compact Disk Read Only Memory) [AD-A189259] p 72 N87-11492
- JANG, J. E.**
Design and implementation of an intelligence database [AD-A154095] p 70 N85-30973
- JANING, D. S.**
Air Force geographic information and analysis system [DEAF-001420] p 74 N88-18505
- JARRATT, J. R.**
Automated administrative data bases p 82 N84-21411
Administrative automation in a scientific environment p 82 N84-33269
- JAWORSKI, ALLAN**
Software aspects of earth observation [AIAA PAPER 89-0779] p 65 A89-28460
- JEFFERSON, D. K.**
Reference model for DBMS (database management system) standardization [PB85-225217] p 9 N86-16923
- JENSEN, RICHARD S.**
Aeronautical decision making Cockpit resource management [AD-A205115] p 61 N89-22327
- JOHNSON, D. R.**
Executive information system [DE84-015355] p 83 N85-13675
- JOHNSON, G. L.**
Approaching distributed database applications using a programmable terminal emulator [DE89-014831] p 31 N89-28308
- JOHNSON, L. L.**
Telecommunications alternatives for federal users Market trends and decisionmaking criteria [PB86-153764] p 23 N86-25687
- JOHNSON, MARJORY J.**
Performance issues in management of the Space Station Information System [NASA-CR-185409] p 88 N89-25773
- JOHNSON, MARK O.**
Use of a geographic information system (GIS) to improve planning for and control of the placement of dredged material p 66 A89-41157
- JOHNSTON, STANFORD**
Computer aided retrieval of vital records p 80 N88-70735
- JOHNSON, VICKI**
A shared-world conceptual model for integrating space station life sciences telepresence operations p 55 N88-20333
- JONES**
Sector suite man-machine functional capabilities and performance requirements [D-A148881] p 52 N85-19647
- JONES, C. R.**
Federal information systems management Problems, solutions and more problems [AD-A171366] p 11 N87-13353
- JONES, D.**
Effective organizational solutions for implementation of DBMS software packages p 5 N84-33268
- JONES, D. R.**
An advanced media interface for control of modern transport aircraft navigational systems [AIAA PAPER 84-2686] p 46 A85-17865

- JONES, KENNIE H.**
The Environment for Application Software Integration and Execution (EASIE), version 1.0 Volume 2: Program integration guide [NASA-TM-100574] p 60 N89-13995
- JONES, M. E.**
Automated Information Management Technology (AIM-TECH): Considerations for a technology investment strategy [AD-A181139] p 38 N86-20173
- JONES, M. T.**
International banking of satellite and in-situ wave data by the Marine Information and Advisory Services (MIAS) p 69 N85-12434
- JONES, PATRICIA M.**
Intent interfacing with a model-based operator's associate [REPT-88-2] p 56 N89-20695
OFMTutor: An operator function model intelligent tutoring system p 56 N89-20696
- JONES, R. H.**
Strip and load data p 6 N84-33273
- JOY, K. L.**
A model for graphics interface tool development p 70 N85-34545
- JUST, MARCEL A.**
The role of working memory in language comprehension [AD-A192721] p 54 N88-26805

K

- KAHN, B. L.**
Security concepts for microprocessor based key generator controllers [AD-A155194] p 111 N85-74089
- KAHN, MARTHA**
Artificial intelligence costs, benefits, and risks for selected spacecraft ground system automation scenarios p 33 A89-21803
- KAMOWSKI, J.**
Bangladesh Agro-Climatic Environmental Monitoring Project p 79 N89-28121
- KANG, HYUNCHUL**
On query processing in distributed database systems p 61 N89-15774
- KANNAN, K. L.**
ATF (Advanced Toroidal Facility) data management [DE89-001872] p 77 N89-16486
- KANTOR, PAUL**
Experiments on the cognitive aspects of information seeking and information retrieving [PB87-157699] p 38 N87-24238
- KAO, SIMON M.**
Real-time knowledge-based monitoring of telemetry data p 34 A89-33685
A multiprocessing architecture for real-time monitoring p 29 N89-15597
- KAPLAN, GEORGE**
Astronomical data analysis from remote sites p 3 A89-27210
- KAPRALOVA, V. V.**
Description of a tentative US-USSR common communication format [DE86-004676] p 96 N86-25681
- KATZ, BORIS**
Exploiting lexical regularities in designing natural language systems [AD-A195922] p 40 N88-30375
Using English for indexing and retrieving [AD-A202227] p 101 N89-20866
- KAUFMAN, J. G.**
Computerized numeric databases for materials properties p 63 A87-13162
Sources and standards for computerized materials property data and intelligent knowledge systems p 33 A89-12182
- KAVI, SRINU**
Knowledge based systems A critical survey of major concepts, issues, and techniques [NASA-CR-184517] p 42 N89-14957
Knowledge based systems A critical survey of major concepts, issues and techniques Visuals [NASA-CR-184518] p 43 N89-14958
- KAWAIN, R. A.**
TIS An intelligent gateway computer for information and modeling networks Overview [DE85-017966] p 20 N84-14067
- KAY, P.**
Future information technology, 1984 telecommunications [PB85-165850] p 22 N85-26173
Future information technology, 1984 telecommunications [NBS/SP-500/119] p 22 N85-27762
- KEHRILI, FIANH77 R.**
The 'investigative' techniques used by the Challenger Commission to address information system failures as they related to the Space Shuttle accident p 58 A88-46509
- KEITH, E. L.**
Space Shuttle security policies and programs p 104 A85-42594
- KELLNER, MARC I.**
Software process modeling [AD-A197137] p 27 N89-13154
- KEMMERER, SHARON J.**
Standards conformance testing [PB86-215645] p 14 N89-11412
- KEMPF, R. F.**
Space Shuttle, private enterprise and intellectual properties in the context of space manufacturing p 112 A84-22341
- KERN, F. A.**
NASA metrology information system: A NEMS subsystem p 68 N84-33279
- KERR, D. S.**
The implementation of a multi-backend database system (MDBS) Part 4 The revised concurrency control and directory management processes and the revised definitions of inter-process and inter-computer messages [AD-A140874] p 21 N84-27453
Towards an ideal database server for office automation environments [AD-A148184] p 7 N85-17742
- KESSLER, P. A.**
Acquisition, use and archiving of real-time data [DE86-014769] p 25 N87-18282
- KHAN, A. RAHMAN**
Technical report literature in chemistry and engineering Bibliometric and content analysis p 102 N89-22525
Identifying users and how to reach them p 102 N89-23370
- KHARINA, I. M.**
Description of a tentative US-USSR common communication format [DE86-004676] p 96 N86-25681
- KIEFER, RALPH W.**
Concept for a satellite-based global reserve monitoring system p 66 A89-41152
- KILDUFF, P. W.**
Human engineering guidelines for management information systems Change 1 [AD-A137808] p 81 N84-21104
- KILGORE, D. C.**
An expert system to facilitate selecting a database management system [DE89-012350] p 45 N89-25774
- KINCAID, J. PETER**
Electronic information delivery at the job site [DE89-009726] p 17 N89-27350
- KING, D. W.**
The use and value of Defense Technical Information Center products and services [AD-A13805] p 92 N84-11061
Measuring the value of information and information systems, services and products p 97 N86-28799
- KING, DAVID A.**
Computer-aided writing [AD-A192519] p 54 N88-26837
- KING, DONALLI W.**
Evaluating the effectiveness of information use p 14 N89-11626
Evaluating the performance of information centre staff p 14 N89-11629
Evaluating performance of information centre operations and services p 14 N89-11630
A framework for evaluating the effectiveness of information centres and services p 14 N89-11631
- KING, ROGER**
Self-adaptive data bases [AD-A186414] p 26 N88-15729
- KINSLEY, KATHRYN C.**
Algorithm for supporting views in the microcomputer environment [PB89-174155] p 32 N89-71248
- KIPP, M. E.**
Sandia computerized shock compression bibliographical database [DE85-018542] p 70 N86-17222
- KLASS, D. L.**
On-line interactive database for the storage and rapid information retrieval of gas industry data [T186-900895] p 96 N86-28792
- KLECKNER, R. L.**
Federal Mineral Land Information System p 70 N85-35459
- KLINEFELTER, PAUL M.**
DOD information analysis centers - Their resources and availability [AIAA PAPER 89-0850] p 91 A89-25619

- KLOSTER, G. V.**
Sector suite man-machine functional capabilities and performance requirements [AD-A148881] p 52 N85-19847
- KNOERDEL, J. E.**
Document interchange format [PB84-217033] p 7 N85-16517
- KOLL, MATTHEW**
The effects of different database formats on information retrieval p 58 A89-35463
- KONG, P.**
Technical overview of the information resource dictionary system [PB85-224491] p 9 N86-19004
- KONRAD, A.**
User's guide for the training database system, version 2.1 [DE88-016653] p 80 N89-70023
User's guide for the ENGNOTE database system for LBL engineering notes, version 1.2 [DE88-016652] p 80 N89-70024
- KONVALINKA, M. J.**
Improving the defense energy information system (DEIS) [AD-A153524] p 84 N85-29849
- KOONS, H. C.**
Spacecraft environmental anomalies expert system p 43 N89-15607
- KOTLAREK, THOMAS L.**
Satellite data management for effective data access p 64 A88-38680
- KRAMER, ARTHUR**
Effects of display proximity and memory demands on the understanding of dynamic multidimensional information p 48 A87-33044
- KREBS-JESPERSEN, MARGARET L.**
Developing a geologic and engineering properties data base with INGRES [DE89-013520] p 79 N89-27593
- KRUBE, J. J.**
On-line interactive database for the storage and rapid information retrieval of gas industry data [TI86-900895] p 96 N86-28792
- KRYGIER, B.**
The automated information retrieval system in the field of science and science Policy-AWION [AD-A135585] p 66 N84-19174
- KUH, ANTHONY**
Information capacity of associative memories p 20 A89-39600
- KUHN, A. D.**
DTIC 2000: A corporate plan for the future [AD-A143900] p 6 N84-34327
- KUHN, ALLAN D.**
Artificial intelligence developments re: DOD Gateway Information System (DGIS) and Defense Applied Information Technology Center (DAITC) [AD-A181101] p 111 N87-27550
DTIC (Defense Technical Information Center) model action plan for incorporating DGIS (DOD Gateway Information System) capabilities [AD-A181102] p 96 N87-27551
DoD Gateway Information System (DGIS) common command language: The first prototyping and the decision for artificial intelligence [AD-A185950] p 39 N88-15725
The DoD Gateway Information System (DGIS) development toward artificial intelligence and hypermedia in common command language [AD-A203874] p 102 N89-20869
- KUMMER, H.**
The Consultative Committee for Space Data Systems (CCSDS) planned and potential use of the recommendations [IAF PAPER 86-303] p 1 A87-18003
- KUPPERMAN, HELEN S.**
Maintaining outer space for peaceful purposes through international cooperation p 2 A89-12104
- KUROSE, JAMES F.**
Resource contention management in parallel systems [AD-A208809] p 32 N89-28332
- KURSTEDT, H. A., JR.**
Research and development of models and instruments to define, measure, and improve shared information processing within government oversight agencies [DE87-012473] p 12 N87-29371
- KURSUOGLU, B. N.**
Interdisciplinary study on artificial intelligence [AD-A131359] p 35 N84-11819
- KURTZ, MICHAEL**
A library collection of software documentation specific to astronomical data reduction p 91 A89-27235
- KWOK, TERESA TING-YIN**
Rdesign: A data dictionary with relational database design capabilities in Ada p 43 N89-16368
- KYRIAKAKIS, T.**
A user's guide for the BIBSORT program for the IBM-PC personal computer [AD-A157836] p 94 N86-12995
- L**
- LACHMAN, ROY**
Computer technologies and institutional memory p 55 N89-20062
- LAFFEY, THOMAS J.**
Real-time knowledge-based monitoring of telemetry data p 34 A89-33685
A multiprocessing architecture for real-time monitoring p 29 N89-15597
- LAMBERT, RALPH E.**
Cockpit information management through an intelligent pilot/vehicle interface [AIAA PAPER 89-2096] p 5.0 A89-49456
- LAMPTON, MICHAEL**
Astronomical data analysis from remote sites p 3 A89-27210
- LANDAHL, C. D.**
On-line interactive database for the storage and rapid information retrieval of gas industry data [TI86-900895] p 96 N86-28792
- LANDENBERGER, J. L.**
Protection of intellectual property in space [AIAA PAPER 88-2779] p 112 A87-18859
- LANDERS, TERRY**
A database management capability for Ada p 77 N89-16371
- LANDIN, S. L.**
An analysis of data dictionaries and their role in information resource management [AD-A152134] p 7 N85-27,21
- LANDIS, D.**
Influences on group productivity. 2: Factors inherent in the person. A bibliographic synopsis [AD-A131015] p 50 N84-15790
- LANGENDORF, P. M.**
Beyond the data base: Technology for information resource management [AD-A138840] p 4 N84-23402
- LANGRAN, G.**
The geonames processing system functional design specification. Volume 4: Advanced symbol processing [AD-A181674] p 71 N86-24226
- LAHN, N. A.**
TIS: An intelligent gateway computer for information and modeling networks. Overview [DE83-017966] p 20 N84-14067
- LAOMANACHAREON, SOMSAK**
DEC Ada interface to Screen Management Guidelines (SMG) p 101 N89-16303
- LARSEN, RONALD L.**
NASA Information Sciences and Human Factors Program [NASA-TM-87569] p 53 N87-22410
- LASKEY, KATHRYN B.**
A personalized and prescriptive decision aid for choice from a database of options [AD-A188726] p 59 N88-20320
- LATRAILLE, S. L.**
Archiving and exchange of a computerized marine seismic database: The ROSE data archive system [DE84-901453] p 69 N85-13677
- LAWRENCE, BARBARA**
Educational uses of the aerospace database [AIAA PAPER 88-0749] p 107 A88-22566
Benefits of scientific and technical information services for aerospace and defense p 98 N87-26677
- LAWRENCE, L. L.**
Acquisition, use and archiving of real-time data [DE86-014769] p 25 N87-18282
- LEACH, M. J.**
Acquisition, use and archiving of real-time data [DE86-014769] p 25 N87-18282
- LEE, MEEMONG**
Concurrent Image Processing Executive (CIPE) [NASA-CR-185460] p 31 N89-25619
- LEHMAN, DOUGLAS**
The Engineer Studies Center guide to research and data collection [AD-A189971] p 13 N88-23680
- LEINER, B. M.**
Access control and privacy in large distributed systems [AIAA PAPER 86-2781] p 106 A87-18861
Access control and privacy in large distributed systems [NASA-TM-89367] p 110 N86-29568
- LEININGER, CAT-YY**
Advanced helicopter cockpit information management p 49 A88-35378
- LEISHMAN, NANCY L.**
Management Information Database System [DE89-014595] p 89 N89-27597
- LEKKOS, ANTHONY A.**
DEC Ada interface to Screen Management Guidelines (SMG) p 101 N89-16303
Rdesign: A data dictionary with relational database design capabilities in Ada p 43 N89-16368
- LENGEL, J. E.**
Improving the defense energy information system (DEIS) [AD-A153524] p 84 N85-29849
- LENOROVITZ**
Sector suite man-machine functional capabilities and performance requirements [AD-A148881] p 52 N85-19847
- LEONARD, W.**
Videotex premastering facility Technical evaluation [PB84-135821] p 20 N84-20840
- LESSER, VICTOR**
Plan recognition, knowledge acquisition and explanation in an intelligent interface p 42 N89-13191
- LEVIN, BETH**
Exploiting lexical regularities in designing natural language systems [AD-A195822] p 40 N88-30375
- LEVINSON, T. M.**
Technology transfer is opportunity transfer [DE85-018622] p 114 N86-17230
- LEVIS, A. H.**
Modeling and analysis of teams of interacting decisionmakers with bounded rationality p 57 A84-21844
Information theoretic models of memory in human decisionmaking models [AD-P002883] p 51 N84-22844
- LIEBOWITZ, J.**
Evaluation of expert systems - An approach and case study p 48 A87-18718
- LILLESAND, THOMAS M.**
The potentials and challenges afforded by SPOT-1 data p 65 A89-10945
- LIND, DAVID J.**
Optical laser technology, specifically CD-ROM (Compact Disc - Read Only Memory) and its application to the storage and retrieval of information [AD-A18,111] p 74 N88-12086
- LINDER, HENRY G.**
Quick-look guide to the crustal dynamics project's data information system [NASA-TM-87818] p 73 N87-23018
- LINDLEY, S. W.**
A process activity monitor for AOS/VS [NASA-TM-86535] p 109 N86-19950
- LINSENMANN, M. KENT**
Information resource management An architectural concept/experience [DE86-015184] p 86 N89-14177
- LIU, HSHUNG**
Concepts and implementations of natural language query systems [NASA-CR-184514] p 60 N89-14954
Natural language query system design for interactive information storage and retrieval systems. Presentation visuals [NASA-CR-134526] p 67 N89-14966
- LIU, J. W. S.**
Monotonically improving approximate answers to relational algebra queries [NASA-CR-184874] p 81 N89-20717
- LIU, T. C.**
Integrated library system at ORNL LION [DE86-008867] p 97 N86-31448
- LIU, YILI**
Effects of display proximity and memory demands on the understanding of dynamic multidimensional information p 48 A87-33044
- LIVINGSTON, ROBERT B.**
Three-dimensional computer graphics brain-mapping project [AD-A197053] p 41 N89-11435
- LOEHR, JOHN JOSEPH**
Simulation and analysis of physical mapping [DE89-009399] p 56 N89-23198
- LOGAN, JAMES C.**
GRAPS (Graphical Plotting System) user's guide. A graphical plotting system for displaying scientific and engineering data [AD-A202583] p 77 N89-21559
- LONG, G.**
Text compression using word tokenization [DE86-000832] p 95 N86-1,2,30
- LOOMIS, AUDREY**
Space station Platform Management System (PMS) replanning using resource envelopes p 86 N89-10071

- LOGGE, FRANK**
LORAN C Offshore Flight Following (LOFF) in the Gulf of Mexico
[AD-A197179] p 75 N89-12558
- LOUGHNANE, L.**
Prototype development of an information-sharing and decision support system for the manpower personnel and training community
[AD-P003310] p 68 N84-28451
- LU, YUN-CHI**
The Land Analysis System (LAS) - A general purpose system for multispectral image processing
p 64 A87-53230
- LUBBES, H. O.**
Computer security acquisition management
[AIAA PAPER 86-2774] p 106 A87-18863
- LUCKENBAUGH, G. L.**
Interconnecting heterogeneous database management systems
p 18 A84-41197
- LUDWIG, G. H.**
Information systems for the Space Station ERA
p 101 N89-18758
- LUK, C. H.**
Towards automated consulting Design feedback from the performance of online documentation
[DE87-012243] p 99 N88-13082
- LUM, VINCENT Y.**
A multimedia database management system supporting contents search in media data
[AD-A207070] p 103 N89-26780
- LUXENBERG, B.**
Intellectual property and space activities
p 112 A85-49972
Aspects of law and practice in the United States
p 112 A85-43349
- LYON, LEONARD A.**
Design and implementation of a controller and a host simulator for a relational replicated database system
[AD-A186951] p 28 N89-14176
- LYONS, N. R.**
Federal information systems management: Problems, solutions and more problems
[AD-A171366] p 11 N87-13353

M

- MACK, G.**
Evaluation of the vocabulary switching systems
[PB85-127157] p 93 N85-22260
- MAKENTHUN, TAMARA C.**
Structured requirements determination for information resources management
[AD-A204764] p 62 N89-22532
- MADISON, DANA E.**
A database approach to computer integrated manufacturing
[AD-A201030] p 16 N89-18088
- MADNI, A. M.**
Intelligent interfaces for human control of advanced automation and smart systems
p 47 A86-21889
- MADNICK, STUART**
Knowledge-based integrated information systems engineering Highlights and bibliography
Knowledge-Based Integrated Information Systems Engineering (KBIISE) Project, volume 1
[AD-A195850] p 40 N88-30449
Integrating images, applications, and communications networks, volume 5
[AD-A195854] p 26 N88-30452
Technical opinions regarding knowledge-based integrated information systems engineering, volume 8
[AD-A195857] p 40 N88-30454
Knowledge-Based Integrated Information Systems Development Methodologies Plan. Knowledge-Based Integrated Information Systems Engineering (KBIISE) report, volume 2
[AD-A195851] p 41 N88-30455
Strategic, organizational and standardization aspects of integrated information systems, volume 6
[AD-A195855] p 14 N88-30457
Integrating distributed homogeneous and heterogeneous databases. Prototypes, volume 3
[AD-A195852] p 27 N89-10668
Object-oriented approach to integrating database semantics, volume 4
[AD-A195853] p 41 N89-10672
- MAKSHIMOVICH, W.**
Bangladesh Agro-Climatic Environmental Monitoring Project
p 79 N89-28121
- MALONE, THOMAS B.**
Advanced human factors engineering tool technologies
p 49 A88-35418
Advanced human factors engineering tool technologies
[AD-A189390] p 54 N88-20825

- MANATT, D. R.**
Design and development of a database for spectral data and analysis results
[DE87-011323] p 74 N88-11564
- MANDELL, S.**
The AGS Booster control system
[DE88-013990] p 28 N89-14068
- MANN, W. C.**
Inquiry semantics A functional semantics of natural language grammar
[AD-A135153] p 36 N84-17929
- MANOR, RUTH**
Intelligent data management
p 86 N89-13913
- MARGLE, S. M.**
Air Force geographic information and analysis system
[DE88-001420] p 74 N88-18505
- MARIOTTI, R.**
The AGS Booster control system
[DE88-013990] p 28 N89-14068
- MARKER, W.**
Space Station Information System integrated communications concept
[AIAA PAPER 87-2228] p 18 A87-48606
Space Station Information System requirements for integrated communications
[AIAA PAPER 87-2229] p 18 A87-48607
- MARRIE, M. D.**
Automated administrative data bases
p 82 N84-21411
- MARSHAK, R.**
Human engineering guidelines for management information systems. Change 1
[AD-A137808] p 81 N84-21104
- MARSHALL, HERMAN**
Astronomical data analysis from remote sites
p 3 A89-27210
- MARSHALL, R. G.**
The architectural requirements and integration analysis of a database server for office automation
[AD-A155517] p 8 N85-32825
- MARTIN, EDITH W.**
Future information technology - The big picture
[AAS PAPER 86-111] p 2 A87-53087
- MARTINEZ, EUGENIO**
Management of complex information in support of evolving autonomous expert systems
[AD-A186680] p 39 N88-17337
- MARTINEZ, RALPH**
Functional description and formal specification of a generic gateway
[AD-A206581] p 31 N89-26776
Protocol interoperability between DDN and ISO (Defense Data Network and International Organization for Standardization) protocols
[AD-A206582] p 31 N89-26777
- MARTINO, J. P.**
Automated Information Management Technology (AIM-TECH) Considerations for a technology investment strategy
[AD-A161139] p 38 N86-20173
- MARTZ, STEVE**
Advanced helicopter cockpit information management
p 49 A88-35376
- MARUSAK, N. L.**
Applying expertise to data in the Geologist's Assistant expert system
[DE89-003463] p 44 N89-20574
- MASTBROOK, D. W.**
Guidelines for certification of existing sensitive systems
[NASA-CR-174080] p 111 N85-70325
- MATUSHIN, G. D.**
Description of a tentative US-USSR common communication format
[DE86-004676] p 96 N86-25681
- MATTHEWS, M.**
Integrity mechanisms in a secure UNIX - Gould UTX/32S
[AIAA PAPER 86-2761] p 105 A87-18854
- MAUCK, LINDA S.**
Conversion of mass storage hierarchy in an IBM computer network
[AD-A206520] p 31 N89-28330
- MAURER, H.**
Bangladesh Agro-Climatic Environmental Monitoring Project
p 79 N89-28121
- MAZER, ALAN S.**
Concurrent Image Processing Executive (CIPE)
[NASA-CR-185460] p 31 N89-25619
- MAZZA, C.**
Data management standards for space information systems
[AIAA PAPER 87-2205] p 2 A87-48590

- MCCARTHY, J.**
Materials Information for Science and Technology (MIST) Project overview Phase 1 and 2 and general considerations
[DE87-006799] p 73 N87-23312
- MCCARTHY, J. L.**
Prototype material properties data network
[NASA-TM-89243] p 24 N86-33208
- MCCAULEY, E. V.**
DTIC 2000 - A corporate plan for the future
[AD-A143900] p 6 N84-34327
- MCCLELLAN, K. W.**
Evaluation of the National Library of Medicine's programs in the medical behavior sciences. Online searchers' reactions to database and vendor capabilities in the Medical Behavioral Sciences (MBS), study 4
[PB84-230523] p 53 N85-12798
- MCCLELLAN, J. L.**
Interactive activation models of perception and comprehension
[AD-A161362] p 52 N86-21143
- MCCLOURE, JAMES P.**
Knowledge-based network operations
p 34 A89-33679
- MCCONNELL, DUDLEY G.**
A proposed Applications Information System - Concept, implementation, and growth
[IAF PAPER 87-156] p 64 A88-15906
- MCDERMOTT, J.**
The role of databases in knowledge-based systems
[AD-A166365] p 38 N86-30573
- MCDONALD, JAMES E.**
Empirical user modeling - Command usage analyses for deriving models of users
p 49 A88-35404
- MCDONALD, JOHN ALAN**
A data viewer for multivariate data
p 28 N89-13921
- MCDONALD, D. P.**
Generic Ada code in the NASA space station command and communications environment
p 29 N89-16341
- MCGARRY, F. E.**
The Software Engineering Laboratory
[NASA-CR-183455] p 89 N89-71121
- MCGEE, R. H.**
Sandia National Laboratories administrative data processing systems
[DE84-014328] p 82 N84-34202
- MCGEE, R. B.**
User interface design for two dimensional polygonally encoded geological survey maps
[AD-A70612] p 53 N87-13840
- MCGOWAN, J.**
Avionics Data Base users manual
[AD-A153810] p 69 N85-28942
- MCGROGAN, S. K.**
TIS - An intelligent gateway computer for information and modeling networks Overview
[DE83-017986] p 20 N84-14067
- MCIVER, DUNCAN E.**
NASA Information Sciences and Human Factors Program
[NASA-TM-87569] p 53 N87-22410
- MCKAY, CHARLES W.**
Distributing program entries in Ada
p 29 N89-16295
- MCKOSKY, R. A.**
A process activity monitor for ACS/vs
[NASA-TM-86535] p 109 N86-19950
- MCMANON, E. M.**
Restricted access processor - An application of computer security technology
p 105 A85-42600
- MCNEELY, B. N.**
User's guide for an IBM PL/I implementation of the international standard organization DIS 8211 information processing-specification for a data descriptive file for information interchange
[ORNL/CSD-TM-207] p 6 N84-34188
- MEANS, S. M.**
EPALIT. A data management system applied to the control and retrieval of technical reports
[PB85-193068] p 94 N85-35828
- MEGARGLE, ROBERT G.**
Laboratory Information Management System (LIMS) A case study
[NASA-TM-100835] p 26 N88-21697
- MEHRMANN, L. W.**
Good security practices for I/S networks
[AIAA PAPER 86-2775] p 106 A87-18858
- MEHROTRA, PIYUSH**
Compiling high level constructs to distributed memory architectures
[NASA-CR-181825] p 30 N89-24058
- MEISTER, D.**
Guide to the development of a human factors engineering data retrieval system
[AD-A136918] p 51 N84-20187

- A systematic approach to human factors measurement [AD-A132423] p 57 N84-71658
- MEISTER, DAVID**
Methods of eliciting information from experts [AD-A187488] p 54 N88-18189
- MENDEL, MAX B.**
Optimal combination of information from multiple sources, part 3 [AD-A174726] p 59 N87-19913
- MENDOZA, J. D.**
Design of an interface to an information retrieval network p 94 N85-27750
- MENICUCCI, D. F.**
A comparison of typical meteorological year solar radiation information with the SOLMET data base [DE88-009242] p 75 N88-29247
- MERRIAM, S.**
Videotape premastering facility: Technical evaluation [PB84-135821] p 20 N84-20840
- MEYER-WEGENER, KLAUS**
A multimedia database management system supporting contents search in media data [AD-A207070] p 103 N89-26790
- MEYER, L.**
Scientific and technical information system for the Washington State Legislature [PB84-100650] p 66 N84-18112
- MICHALSKI, R. S.**
Machine learning. Part 1. A historical and methodological analysis [AD-A131424] p 36 N84-11824
- MICHELSEN, C. D.**
Logical and physical database design with a full-text environment [DE85-015683] p 23 N86-16159
- MILES, P. A.**
A systematic method for evaluating security requirements compliance p 105 A85-42597
- MILEVSKI, S. N.**
Public laws of the 98th Congress relating to information policy [CRS-TK-7885-F] p 114 N86-27130
- MILLER, C.**
Information Management in the Department of Defense. The role of libraries [AD-A130345] p 80 N85-70560
- MILLER, DANIEL H.**
ISTAR evaluation [AD-A201345] p 87 N89-19903
- MILLER, G.**
Integrity mechanisms in a secure UNIX - Gould UTX/32S [AIAA PAPER 86-2761] p 105 A87-18854
- MILLER, KEITH H.**
Man/System Integration Standards for space systems p 48 A87-33020
NASA-STD-3000, Man-System Integration Standards - The new space human engineering standards [IAF PAPER 87-550] p 49 A88-16167
- MILNE, ROBERT**
Information management expert systems p 87 N89-16407
- MINDLIN, H.**
Data dissemination and online numeric database systems p 62 A85-14170
Data base system considerations in engineering design p 19 A89-12177
- MINTON, S.**
Metaphor and common-sense reasoning [AD-A131423] p 35 N84-11756
- MITCHELL, B. M.**
Telecommunications alternatives for federal users. Market trends and decisionmaking criteria [PB86-153764] p 23 N86-25687
- MITCHELL, CHRISTINE M.**
Intent inferring with a model-based operator's associate [REPT-88-2] p 56 N89-20695
- MITCHELL, I. R.**
Sandia National Laboratories administrative data processing systems [DE84-014328] p 82 N84-34202
- MITCHELL, T. M.**
Machine learning. Part 1. A historical and methodological analysis [AD-A131424] p 36 N84-11824
- MOJA, D. C.**
Artificial intelligence - New tools for aerospace project managers p 32 A86-34986
- MONTEIRO, EDWARD J.**
Space station Ada runtime support for nested atomic transactions p 77 N89-16375
- MONTEMERLO, MELVIN D.**
NASA Information Sciences and Human Factors Program [NASA-TM-87569] p 53 N87-22410
- MONTTOYA, G.**
Technical and management information system. The tool for professional productivity on the space station program p 84 N86-15171
- MOORE, R. C.**
Knowledge representation and natural-language semantics [AL-A146025] p 37 N85-12615
- MOORE, T.**
Bangladesh Agro-Climatic Environmental Monitoring Project p 79 N89-28121
- MORAN, R. J.**
Acquisition, use and archiving of real-time data [DE86-014769] p 25 N87-18282
- MORAN, THOMAS P.**
The model human processor - An engineering model of human performance p 49 A87-33532
- MORELL, J. A.**
Implementing and managing change. A guide for assessing information technology [DE88-000035] p 12 N88-11571
- MORELL, JONATHAN A.**
The impact of information technology on research in science and engineering [DE88-000342] p 13 N88-12417
- MOROH, MARSHA**
Resident database interfaces to the DAVID system, a heterogeneous distributed database management system [NASA-CR-184615] p 87 N89-14946
- MORRISON, I.**
Text compression using word tokenization [DE86-000832] p 95 N86-19260
- MORRISON, J. M.**
Management information system for engineering [DE84-001655] p 81 N84-14984
- MOSER, R. R., JR.**
GPS/JTIDS compatibility p 63 A87-13537
- MOSSINGHOFF, G. J.**
Intellectual property and space activities p 112 A85-49972
- MOSSMAN, DIANA L.**
Concept for a satellite-based global reserve monitoring system p 66 A89-41152
- MOTT, T. D.**
Life cycle management handbook [DE89-004315] p 15 N89-17545
- MOULIK, AMAL**
Interactive access to scientific and technological factual databases worldwide [DE88-016172] p 100 N89-14943
- MOUNTAIN, P. J.**
Using bar code technology to enhance classified document accountability [DE87-000760] p 98 N87-21739
- MOUNTAIN, PATRICK J.**
Using bar code technology to enhance classified document accountability p 112 N88-70733
- MOZER, M. C.**
Inductive information retrieval using parallel distributed computation [AD-A142712] p 36 N84-31050
- MROZ, PETER A.**
A data-base management scheme for computer-aided control engineering p 33 A88-54484
- MUKHOPADHYAY, S.**
An integrated data base management system for engineering applications based on an extended relational model p 19 A89-12181
- MULROY, M. J.**
Technology transfer primer [PB86-205341] p 73 N87-12404
- MUNCK, ROBERT G.**
A computer-based specification methodology p 101 N89-16301
- MURATORE, J.**
Space Station Information System integrated communications concept [AIAA PAPER 87-2228] p 18 A87-48606
Space Station Information System requirements for integrated communications [AIAA PAPER 87-2229] p 18 A87-48607
- MURPHY, T. P.**
Post-processing of bibliographic citations from DOE/Recon, NASA/Recon, and DOD/DROLS [DE85-000617] p 93 N85-20938
- MURRAY, T. P.**
Maintenance Management Information and Control System (MMICS) Administrative boon or burden [AD-A145762] p 83 N85-12790
- MUSICO, V. A.**
Evaluation of the National Library of Medicine's programs in the medical behavior sciences. Online searchers' reactions to database and vendor capabilities in the Medical Behavioral Sciences (MBS), study 4 [PB84-230523] p 83 N85-12798
- MYERS, DALE**
The PAD is back p 17 N84-70432

N

- NEUGENT, W.**
Guideline for computer security certification and accreditation Category ADP (Automatic Data Processing) operations Subcategory Computer security. Federal information processing standards [FIPS-PUB-102] p 108 N84-30736
Technology assessment. Methods for measuring the level of computer security [PB86-129954] p 110 N86-25140
- NEWELL, ALLEN**
The model human processor - An engineering model of human performance p 49 A87-33532
- NEWMAN, C. THOMAS**
Controlling resources in the Apollo program p 17 N89-70436
- NICHOLS, R. G.**
The creation of a central database on a microcomputer network [AD A143875] p 21 N84-34326
- NICHOLSON, WESLEY L.**
Experiences with a data analysis management prototype p 60 N89-13918
- NIEBUHR, D. W.**
Acquisition, use and archiving of real-time data [DE86-014769] p 25 N87-18282
- NIEH, KO-HAW**
A data-base management scheme for computer-aided control engineering p 33 A88-54484
- NIEHOFF, R.**
Evaluation of the vocabulary switching systems [PB85-127157] p 83 N85-22260
- NIRENBURG, SERGEI**
Planner system for the application of indications and warning p 42 N89-13188
- NIXON, P. R.**
Applications of multispectral video for natural resource assessment p 65 A89-10988
- NOBLE, D. F.**
Schema-based theory of information presentation for distributed decision making [AD-A163150] p 58 N86-25992
- NOLL, CAREY E.**
Quick-look guide to the crustal dynamics project's data information system [NASA-TM-87818] p 73 N87-23018
- NORI, ANIL**
A database management capability for Ada p 77 N89-16371
- NORTHROP, C. J. M., JR.**
Prototype material properties data network [NASA-TM-89243] p 24 N86-33208
- NORTHROP, C. J., JR.**
Materials Information for Science and Technology (MIST). Project overview: Phase 1 and 2 and general considerations [DE87-006799] p 73 N87-23312
- NORTON, S.**
Towards automated consulting. Design feedback from the performance of online documentation [DE87-012243] p 99 N88-13082
- NUGENT, RICHARD O.**
An architecture for integrating distributed and cooperating knowledge-based Air Force decision aids p 44 N89-19841
- NUGENT, WILLIAM H.**
Artificial intelligence techniques for retrospective help in data analysis p 42 N89-13915

O

- OBLER, H.**
Bangladesh Agro-Climatic Environmental Monitoring Project p 79 N89-28121
- OCONNOR, D. J.**
Local automation model. System specification [AD-A141503] p 92 N84-29798
Microcomputer-based local automation model. Functional description [AD-A160610] p 95 N86-19002
Microcomputer-based local automation model. System planning guidance [AD-A168136] p 98 N87-11630

- OHARA, F. M., JR.**
Computer-Output Microfiche (COM) on the Oak Ridge computer network
[DE84-002422] p 92 N84-15836
- OKELLEY, D. K.**
ADRS: Automated Data Reduction System
[NASA-CR-183438] p 89 N89-71278
- OKOLIE, CHARLES CHUKWUMA**
International space law norms regulating remote sensing of the earth from outer space p 113 A89-12126
- OLD, J. L.**
An advanced media interface for control of modern transport aircraft navigational systems
[AIAA PAPER 84-2686] p 46 A85-17865
- OLDANI, J. J.**
An online directory of databases for material properties
[DE84-013210] p 68 N84-33099
- OLDFORD, R. W.**
Statistically sophisticated software and DINDE
p 28 N89-13920
- OLIGER, JOSEPH**
A visual object-oriented unification system
[AD-A206228] p 30 N89-24068
- OLSON, R. J.**
Guidelines for exchanging computerized information
[DE88-004736] p 13 N88-18510
- OROCHI, A.**
The implementation of a multi-backend database system (MDBS). Part 4: The revised concurrency control and directory management processes and the revised definitions of inter-process and inter-computer messages
[AD-A140874] p 21 N84-27453
- OSATO, S.**
Influences on group productivity. 2: Factors inherent in the person. A bibliographic synopsis
[AD-A131015] p 50 N84-15790
- OSGOOD, S. S.**
Menuing and scrolling as alternative information management techniques
[AD-A203029] p 88 N89-22524
- OVERBECK, R.**
Practical issues relating to the internal database predicates in an OR-parallel protog. Extensions and useful hacks
[DE88-010019] p 27 N89-13174
- OWENS, MARLENE J.**
Technology Master List data base management system, user's manual
[PB89-177802] p 89 N89-27590
- OWENS, R. L.**
An analysis of data dictionaries and their role in information resource management
[AD-A152134] p 7 N85-27121
- OXMAN, J.**
Prototype development of an information-sharing and decision support system for the manpower personnel and training community
[AD-P003310] p 68 N84-28451
- OZIN, Y.**
Design and implementation of a personnel database
[AD-A159388] p 70 N86-16917

P

- PACIORKOWSKI, D. V.**
A contextual postprocessing expert system for English sentence reading machines
[AD-A163951] p 96 N86-26026
- PAKATH, RAMAKRISHNAN**
Information acquisition for model construction. An integrative, decision-theoretic perspective
p 61 N89-21705
- PALEY, J. J.**
Intercenter Problem Reporting System (PRACAS)
p 104 N84-21408
- PAPACCIO, P. N.**
Multilevel data store design
[AIAA PAPER 86-2772] p 106 A87-18856
- PAPCUN, G. J.**
Applying expertise to data in the Geologist's Assistant expert system
[DE89-003483] p 44 N89-20574
- PARKS, D.**
Organizations as information processing systems. Environmental characteristics, company performance and chief executive scanning, an empirical study
[AD-A168035] p 10 N86-33201
- PARRIS, R. R.**
Systematic corporate planning at DTIC (Defense Technical Information Center)
[AD-A171525] p 11 N87-15902

- PARRISH, R. V.**
An advanced media interface for control of modern transport aircraft navigational systems
[AIAA PAPER 84-2686] p 46 A85-17865
- PARTOTT, B.**
Information transfer in Soviet science and engineering
[RAND-R-2667-ARPA] p 80 N84-74361
- PARSONS, H. MCILVAINE**
SARSCEST (human factors) p 55 N89-19890
- PAUL, A. C.**
Design of a scientific information collation and dissemination system, volumes 1 thru 3
[AD-A148002] p 69 N85-12791
- PAUMER, JAMES O.**
Meteorological processor for regulatory models (MPRM-1.1) user's guide
[PB89-127526] p 78 N89-22188
- PEARLSTEIN, S.**
The international scope of data evaluation
[DE85-005953] p 8 N85-30760
- PENFIELD, PAUL, JR.**
Computer-aided fabrication system implementation
[AD-A203651] p 88 N89-21576
- PENNHMAN, W. DAVID**
Evaluating for information center planning
p 15 N89-11632
- PEREDO, JAMES P.**
The IBM PC at NASA Ames p 16 N89-18392
- PERKINS, DOROTHY C.**
The Transportable Applications Environment - An interactive design-to-production development system
p 50 N89-29067
- PERKINS, W. A.**
Experiments with temporal reasoning applied to analysis of telemetry data p 85 A89-11809
- PERMENTER, KATHRYN E.**
Advanced human factors engineering tool technologies p 49 A88-35418
Advanced human factors engineering tool technologies [AD-A189390] p 54 N88-20825
- PERSON, L. H., JR.**
An advanced media interface for control of modern transport aircraft navigational systems
[AIAA PAPER 84-2686] p 46 A85-17865
- PESCHKE, R. E.**
A structural optimization method for information resource management
[AD-A166420] p 59 N86-29722
- PETERS, D. J.**
Introduction to the Space Physics Analysis Network (SPAN)
[NASA-TM-86499] p 22 N85-24198
- PETERS, ROBERT**
The effects of different data base formats on information retrieval p 58 A88-35463
- PETERS, S. C.**
Statistically sophisticated software and DINDE
p 28 N89-13920
- PETERSEN, R. J.**
EXAMINE - An expert system to mediate human-computer dialogs p 47 A86-23740
- PETERSON, E.**
NASA metrology information system. A NEMS subsystem p 68 N84-33279
- PETTY, D. L.**
Development of a user support package for CPESIM 2 (a computer simulation for CPE (Computer Performance Evaluation) use
[AD-A151899] p 22 N85-26170
- PEUQUET, DONNA J.**
Advanced techniques for the storage and use of very large, heterogeneous spatial databases. The representation of geographic knowledge: Toward a universal framework
[NASA-CR-181517] p 39 N88-12421
- PFALTZ, J. L.**
Implementation of a hypercube database system
[DE89-010474] p 88 N89-26413
- PHILLIPS**
Sector suite man-machine functional capabilities and performance requirements p 52 N85-19647
- PHILLIPS, J. T.**
Automated library systems and document tracking systems: Commercial software alternatives, volume 1
[DE89-007716] p 102 N89-21706
- PHILLIPS, J. T., JR.**
Approaching distributed database applications using a programmable terminal emulator
[DE89-014831] p 31 N89-28308
- PICHUMANI, RAMANI**
A visual object-oriented unification system
[AD-A206228] p 30 N89-24068

- PICKERING, CYNTHIA K.**
System integration of knowledge-based maintenance aids p 42 N89-14768
- PIERSON, L. G.**
Elements of a proposed security methodology for networks of computers
[DE87-008769] p 110 N87-23152
- PINELLI, T. E.**
The function of report components in the screening and reading of technical reports p 90 A84-45547
- PITTMAN, CLARENCE W.**
Space Station Information Systems
[IAF PAPER 86-059] p 80 A88-55330
- PITTS, J. A. S.**
Records Disposal: A guidebook for laboratory offices
[AD-A150064] p 9 N85-35823
- PLUMMER, O. R.**
The database management system. A topic and a tool p 4 N84-22316
- POAG, JAMES E.**
Common sense and practical experience prior to 2187
[AIAA PAPER 88-3990] p 3 A89-18148
- POCHY, R. D.**
Design and development of a database for spectral data and analysis results
[DE87-011323] p 74 N88-11564
- POLANYI, LIVIA**
KREME (Knowledge Representation, Editing and Modeling Environment). A user's introduction, phase 1
[AD-A188906] p 39 N88-20052
- PONCELEON, DULCE**
A visual object-oriented unification system
[AD-A206228] p 30 N89-24068
- POPE, R. D.**
Economic value of consumer information. A selected, annotated bibliography
[PB84-235795] p 7 N85-13673
- POPEK, G. J.**
Secure distributed processing systems
[AD-A134935] p 111 N84-73042
- PORITZKY, S. B.**
FANS - A U.S. perspective p 1 A87-11807
- POUTRE, D. L.**
Multi-level security for computer networking - SAC digital network approach p 18 A85-14469
- POWELL, FEROLYN T.**
Local resource utilization and integration into advanced mission's LSS
[SAE PAPER 881053] p 65 A89-27851
- POWELL, CHRISTOPHER A.**
System integration of knowledge-based maintenance aids p 42 N89-14768
- POWELL, P.**
Future information technology, 1984 telecommunications
[PB85-165850] p 22 N85-26173
Future information technology, 1984 telecommunications
[NBS/SP-500/119] p 22 N85-27762
- POWERS, J. M.**
Word processors in aerospace/defense information services. Use of distributed information systems by the Office of the Secretary of Defense p 4 N84-21429
- POZZO, M. M.**
A model for the containment of computer viruses
[AIAA PAPER 86-2759] p 105 A87-18853
- PRASSINOS, P. G.**
Livermore risk analysis methodology: A quantitative approach to management of the risk associated with the operation of information systems
[DE87-006828] p 110 N87-24232
- PREVENAS, E. A.**
A decision support system for cost-effectiveness analysis for control and security of computer systems
[AD-A161388] p 58 N86-22134
- PRUETT, DAVID**
Space Station Information System - Concepts and international issues
[IAF PAPER 87-76] p 64 A88-15851
- PRUETT, N. J.**
State of the art of geoscience libraries and information services
[DE86-011188] p 97 N86-33207
- PULASKI, KIRT**
Case-based reasoning: The manage of knowledge base and data base p 43 N89-15574
- PURVES, R. B.**
Foundation. Transforming data bases into knowledge bases p 39 N88-16423

Q

- QUINN, JOHN
The hack attack - Increasing computer system awareness of vulnerability threats
[AIAA PAPER 87-3093] p 107 A88-28212

R

- RADOSEVICH, J. D.
NASA Administrative Data Base Management Systems, 1983
[NASA-CR-2304] p 81 N84-21403
NASA Administrative Data Base Management Systems, 1984
[NASA-CR-2323] p 82 N84-33286
- RAMAPRIYAN, H. K.
Proceedings of the Scientific Data Compression Workshop
[NASA-CR-3025] p 78 N89-22332
- RAMRAS-BERLIN, S. D.
Implementation of multifunction information systems at three Navy facilities
[AD-A157797] p 84 N86-16153
- RANDALL, DONALD P.
The Environment for Application Software Integration and Execution (EASIE), version 1.0 Volume 2: Program Integration guide
[NASA-TM-100574] p 60 N89-13995
- RAPAPORT, WILLIAM J.
SNEPS considered as a fully intentional propositional semantic network
p 27 N89-13184
- RAPP, B. A.
Evaluation of the National Library of Medicine's programs in the medical behavior sciences. Online searchers' reactions to database and vendor capabilities in the Medical Behavioral Sciences (MBS), study 4
[PB84-230823] p 93 N85-12798
- RASCHID, L.
Incorporating knowledge rules in a semantic data model - An approach to integrated knowledge management
p 32 A87-16697
- RASH, JAMES
The 1989 Goddard Conference on Space Applications of Artificial Intelligence
[NASA-CR-3033] p 45 N89-26578
- RASH, JAMES L.
1988 Goddard Conference on Space Applications of Artificial Intelligence, Greenbelt, MD, May 24, 1988, Proceedings
p 33 A89-21801
- RAU, TIMOTHY R.
Technical and Management Information System (TMIS)
[AIAA PAPER 87-2217] p 64 A87-48600
- RAULEFS, P.
An architecture for heuristic control of real-time processes
p 57 N89-26470
- PAYMOND, SLATE
REFFREE: Bibliographic database manager, documentation
[PB88-200787] p 100 N89-11620
- READ, JACKSON V.
Real-time knowledge-based monitoring of telemetry data
p 34 A89-33685
A multiprocessing architecture for real-time monitoring
p 29 N89-15597
- REBER, T. F.
The man-machine interface in computerized telemetry systems
p 48 A84-32429
- REDER, L. M.
Beyond associations: Strategic components in memory retrieval
[AD-A180783] p 52 N86-18985
- REED, W. G.
Telecommunications security and privacy
p 111 N85-74342
- REESE, GEORGE E.
Maintaining outer space for peaceful purposes through international cooperation
p 2 A89-12104
- REEVES
Sector suite man-machine functional capabilities and performance requirements
[AD-A148881] p 52 N85-19647
- REEVES, C. A., JR.
Efforts at office automation and information systems utilization at Martin Marietta Energy Systems, Incorporated
[DE85-008154] p 8 N85-28633
- REGELBRUGGE, MARC E.
The computational structural mechanics testbed architecture. Volume 4. The global-database manager GAL-DBM
[NASA-CR-178387] p 78 N89-16195

- REHMANN, J. T.
The Flight Service Automation System
p 48 A84-44751
- REISING, S. A.
Automated administrative data bases
p 62 N84-21411
- REITMAN, W.
Automated Information Management Technology (AIM-TECH): Considerations for a technology investment strategy
[AD-A181139] p 36 N86-20173
- REPH, M.
Data set management
p 24 N86-29285
- REPH, M. G.
The pilot climate data system
p 63 A86-20889
- REY-WATSON, JOYCE
A library collection of software documentation specific to astronomical data reduction
p 91 A89-27235
- RHODES, CAROL
A library collection of software documentation specific to astronomical data reduction
p 91 A89-27235
- RICH, MICHAEL A.
Digital mockup
[AIAA PAPER 89-2088] p 66 A89-49447
- RICHARDS, L.
Prototype development of an information-sharing and decision support system for the manpower personnel and training community
[AD-P003310] p 66 N84-28451
- RIEGEL, J. P., III
ADRS: Automated Data Reduction System
[NASA-CR-183438] p 89 N89-71278
- RILEY, V.
A systems approach to ATE documentation
p 62 A85-26824
- RIMPO, JEANNE YATES
Technology Master List data base management system, user's manual
[PB89-177802] p 89 N89-27590
- RIVETNA, R.
Recommended documentation for computer users at AITL
[DL84-016285] p 7 N85-15434
- ROBERTSON, D. L.
Data dictionary systems and their role in information resource management
[AD-A144905] p 6 N85-10659
- ROBINSON, J. J.
Approaching distributed database applications using a programmable terminal emulator
[DE89-014831] p 31 N89-28308
- RODERER, H. K.
The use and value of Defense Technical Information Center products and services
[AD-A130805] p 92 N84-11081
- ROELOFS, LARRY
Automated cataloging and characterization of space-derived data
p 91 A89-21812
Automated cataloging and characterization of space-derived data
p 13 N88-30354
- ROELOFS, LARRY H.
The development of an intelligent user interface for NASA's scientific databases
p 48 A87-28445
The development of a prototype intelligent user interface subsystem for NASA's scientific database systems
[NASA-TM-87821] p 53 N87-24098
- ROGERS, PATRICK
Distributing program entities in Ada
p 29 N89-16295
- ROGERS, WILLIAM H.
Implications of the language of data for computing systems
p 28 N89-13911
The language of data. A general theory of data
p 66 N89-13912
- ROLOFS, LARRY H.
The intelligent user interface for NASA's advanced information management systems
p 39 N88-16424
- ROSE, L.
Space station integrated propulsion and fluid systems study
[NASA-CR-179393] p 75 N89-12581
- ROSEBERRY, L. M.
An expert system to facilitate selecting a database management system
[DE89-012350] p 45 N89-25774
- ROSEN, B. K.
Computer science and technology Guide to distributed database management
[PB89-201581] p 27 N89-11621
- ROSEN, LOUIS
Relevance of international research facilities to international stability
[DE89-009400] p 103 N89-23380

- ROTEM, DORON
Precision-time tradeoffs: A paradigm for processing statistical queries on databases
[DE88-012024] p 60 N89-11408
- ROTHSCHILD, M. C.
Information analysis centers in the department of defense, revision
[AD-A184002] p 98 N88-12420
- ROUSE, W. B.
An architecture for intelligent interfaces - Outline of an approach to supporting operators of complex systems
p 48 A87-16618
- ROWE, M. C.
Content-Addressable Memory manager: Design and evaluation
[AD-A184037] p 23 N86-25133
- ROWELL, LAWRENCE F.
The Environment for Application Software Integration and Execution (EASIE), version 1.0, Volume 2: Program integration guide
[NASA-TM-100574] p 60 N89-13995
The Environment for Application Software Integration and Execution (EASIE) version 1.0, Volume 1: Executive overview
[NASA-TM-100573] p 61 N89-21538
- RUBIN, KENNETH S.
Intent Interfering with a model-based operator's associate
[REPT-88-2] p 56 N89-20695
- RULAND, DETLEV
Integrated database approach for geodetic applications
[DE88-012726] p 75 N89-11615
- RULAND, ROBERT
Integrated database approach for geodetic applications
[DE88-012726] p 75 N89-11615
- RUMBLE, J.
Towards a tribology information system. The results of a Planning Workshop held at the National Bureau of Standards, July-August 1985
[PB86-168804] p 26 N86-21448
- RUMBLE, J. JR.
Materials Information for Science and Technology (MIST). Project overview. Phase 1 and 2 and general considerations
[DE87-006799] p 73 N87-23312
- RUNNELS, S.
ADRS: Automated Data Reduction System
[NASA-CR-183438] p 89 N89-71278
- RUTHBERG, Z. G.
Guideline for computer security certification and accreditation. Category: ADP (Automatic Data Processing) operations. Subcategory: Computer security. Federal information processing standards
[FIPS-PUB-102] p 108 N84-30736
Technology assessment: Methods for measuring the level of computer security
[PB86-129654] p 110 N86-25140
- RYAN, J. PATRICK
A data analysis expert system for large established distributed databases
p 33 A89-11718

S

- SADOSKI, P. A.
The Remote Atmospheric Probing Information Display (RAPID) system
[AD-A196314] p 75 N89-10500
- SAGE, A. P.
ARIADNE - A knowledge-based interactive system for planning and decision support
p 57 A84-33483
- SALAMAN, R. K.
Policy implications of information technology
[PB84-183219] p 5 N84-31060
- SALAZKINA, S. I.
Description of a tentative US-USSR common communication format
[DE86-004676] p 98 N86-25681
- SALGUERO, DAVID E.
Engineering Graphics System (EGS) user's manual
[DE89-009668] p 79 N89-23199
- SALWEN, C.
The AGS Booster control system
[DE88-013990] p 28 N89-14068
- SAN, KA-YIU
An expert system based intelligent control scheme for space biosensors
p 44 N89-20285
- SANNER, R. D.
Information information networks for material properties. Revision 1
[DE85-007412] p 22 N85-27572

SARACEVIC, TEFKO

- Experiments on the cognitive aspects of information seeking and information retrieving [PB87-157699] p 38 N87-24238
- SATKINS, S. W.
Document interchange format [PB84-217033] p 7 N85-16517
- SCHAAD, JAMES L.
Allocation strategies for APL on the CHP (configurable highly parallel) computer [AD-A203781] p 32 N89-70704
- SCHANK, R. C.
Memory-based expert systems [AD-A145612] p 37 N85-11628
- SCHMERLING, E. R.
A user view of office automation or the integrated workstation p 6 N84-33271
- SCHMID, L. C.
Technology transfer is opportunity transfer [DE85-016622] p 114 N86-17230
- SCHMIDT, JAMES L.
Real-time knowledge-based monitoring of telemetry data p 34 A89-33685
A multiprocessing architecture for real-time monitoring p 29 N89-15597
- SCHMITT, R. P.
Technology transfer primer [PB86-205341] p 73 N87-12404
- SCHMITZ, MARION
IUE archived spectra [NASA-TM-100715] p 101 N89-15829
The IUE data bank. Statistics and future aspects p 115 N89-18609
- SCHNECK, P.
NASA-wide standard administrative systems p 82 N84-21415
- SCHOESS, JEFF
A Distributed Sensor Architecture for advanced aerospace systems p 34 A89-26860
- SCHOFER, R.
National Archives and Records Service (NARS) twenty year preservation plan [PB85-177640] p 84 N85-29854
- SCHRAGE, DANIEL P.
TRUSS: An intelligent design system for aircraft wings p 79 N89-25162
- SCHULTE, ROGER R.
Lewins Information Network (LINK) Background and overview [NASA-TM-100182] p 25 N88-11925
- SCHUMBURG, N.
The AGS Booster control system [DE88-013990] p 28 N89-14068
- SCHURMAN, DONALD L.
Electronic information delivery at the job site [DE89-009726] p 17 N89-27350
- SCHYANEVELDT, ROGER W.
Empirical user modeling - Command usage analyses for deriving models of users p 49 A88-35404
- SCOTT, W. S.
TIS: An intelligent gateway computer for information and modeling networks. Overview [DE83-017986] p 20 N84-14067
- SEBERA, C. WAYNE
Software aspects of earth observation [AIAA PAPER 89-0779] p 65 A89-28460
- SEGAL, DAVID A.
Walter user's manual (Version 1.0) [AD-A192542] p 55 N88-28644
- SELCUK, M. K.
Peak power cost reduction guidebook [NASA-CR-185020] p 17 N89-71009
- SERRE, P.
Information search in judgment tasks. The effects of unequal cue validity and cost [AD-A141712] p 5 N84-29437
- SEVIER, NICOLE E.
Developing a connector selection DEMS using NIAM (Nissen's Information Analysis Methodology) [DE89-001658] p 61 N89-15330
- SHAFFER, D. F.
Logical and physical database design with a full-text environment [DE85-015683] p 23 N86-16159
- SHANKS, J. MERRILL
Computer-aided survey methods p 86 N89-13954
- SHAPIRO, N. Z.
Interactive information environments: A plan for enabling interdisciplinary research [RAND/N-2115] p 6 N84-33284
- SHAPIRO, STUART C.
SNePS considered as a fully intensional propositional semantic network p 27 N89-13184

SHEPSON, J. P.

- Implementation of multi-function information systems at three Navy facilities [AD-A157797] p 84 N86-16153
- SHERIDAN, THOMAS B.
Optimal combination of information from multiple sources, part 3 [AD-A174726] p 59 N87-19913
Satisficing decision-making in supervisory control, part 2 [AD-A174631] p 59 N87-20128
- SHERMAN, STEPHEN W.
I/O buffer performance in a virtual memory system [NASA-CR-185730] p 32 N89-71335
Performance of a data base management system with partially locked virtual buffers [NASA-CR-185729] p 90 N89-71336
- SHOCKLEY, CYNTHIA W.
Capitalizing on experience with intelligence gateway software [AD-A193362] p 99 N86-27971
- SHORT, NICHOLAS M., JR.
The development of a prototype intelligent user interface subsystem for NASA's scientific database systems [NASA-TM-87821] p 53 N87-24098
- SHORT, NICHOLAS, JR.
The second generation intelligent user interface for the crustal dynamics data information system p 34 A89-21810
The intelligent user interface for NASA's advanced information management systems p 39 N88-16424
The second generation intelligent user interface for the crustal dynamics data information system p 40 N88-30352
- SHOWALTER, JAMES E.
Information systems for shuttle processing - An enterprise approach p 2 A88-52359
- SHULER, JEAN
Problems and solutions in online documentation systems [DE89-014092] p 80 N89-23447
- SIELEY, L.
Towards a tribology information system. The results of a Planning Workshop held at the National Bureau of Standards, July-August 1985 [PB88-186004] p 26 N86-21448
- SIGMON, E. B.
Electronic information management and productivity [DE85-013362] p 9 N85-35818
- SILVERMAN, BARRY Q.
Artificial intelligence costs, benefits, and risks for selected spacecraft ground system automation scenarios p 33 A89-21803
- SIMANTON, D. F.
Improving management decision processes through centralized communication linkages p 58 N86-15175
- SIRBU, M. A.
Telecommunications alternatives for federal users. Market trends and decisionmaking criteria [PB86-153764] p 23 N86-25687
- SIROTKIN, KARL
Simulation and analysis of physical mapping [DE89-009399] p 56 N89-23198
- SLAMECKA, V.
National STI (Scientific and Technical Information) system of Egypt: Implementation [PB84-161777] p 104 N84-74126
Egyptian National System for Scientific and Technical Information: Design study [PB84-179423] p 80 N84-75267
- SLATER, MARILYN KAYE
Bibliographic coupling among scientific papers in biological research specialties p 103 N89-25771
- SMILLIE, R. J.
Implications of artificial intelligence for a user defined technical information system [AD-P003938] p 37 N85-11618
- SMITH, G. F.
Microcomputer-based detachment administrative management system for the LAMPS (Light Airborne Multi-Purpose System) community. A requirements analysis [AD-A162366] p 85 N86-24552
- SMITH, GRAHAME B.
Core knowledge system. Storage and retrieval of inconsistent information p 45 N89-23132
- SMITH, JOHN B.
A hypertext writing environment and its cognitive basis [AD-A188179] p 54 N88-18298
- SMITH, JOHN M.
A database management capability for Ada p 77 N89-16371
- SMITH, KENNETH P.
Monotonically improving approximate answers to relational algebra queries [NASA-CR-184874] p 61 N89-20717

SMITH, P. H.

- The pilot climate data system p 63 A86-20889
- SMITH, S. H.
Data base system considerations in engineering design p 19 A89-12177
- SMITH, T.
Remote Sensing Information Sciences Research Group, Santa Barbara Information Sciences Research Group, year 3 [NASA-CR-179769] p 72 N86-32663
- SNOW, JOHN B.
A rapid prototyping/artificial intelligence approach to space station-era information management and access p 46 N89-26800
- SNYDER, W. V.
Algorithm 807 - Text exchange system. A transportable system for management and exchange of programs and other text p 18 A84-44325
- SOKOLOSKI, MARTY
NASA Information Sciences and Human Factors Program [NASA-TM-87569] p 53 N87-22410
- SOLOMON, J. A.
Guidelines for exchanging computerized information [DE88-004736] p 13 N86-18510
- SOM, S. H.
Implementation of a hypercube database system [DE89-010474] p 88 N89-26413
- SOREIDE, N. M.
A system for management, display and analysis of oceanographic time series and hydrographic data p 65 A89-12863
- SORENSEN, D.
A project for developing a linear algebra library for high-performance computers [DE89-007501] p 78 N89-22374
- SORMUNEN, J.
Organizations as information processing systems. Environmental characteristics, company performance and chief executive scanning, an empirical study [AD-A186035] p 10 N86-33201
- SPARKS, ALLEN R.
GEO-EAS (Geostatistical Environmental Assessment Software) user's guide [PB89-151252] p 89 N89-27261
- SPECTER, C.
Technology transfer for development of coastal zone resources. Caribbean experts examine critical issues p 77 N89-18749
- SPENDER, J.-C.
Computer security and user authentication - Old problems, new solutions [AIAA PAPER 86-2760] p 107 A87-18865
- SPELTING, GEORGE
Strategy and optimization in human information processing p 48 A87-33502
- SPINKS, P.
Information Management in the Department of Defense. The role of libraries [AD-A130345] p 80 N85-70580
- SQUIBB, G. F.
NASA astrophysical data system (ADS) study p 81 A89-27239
- SQUIRES, F. M.
U.S. Coast Guard Information Center plan [PB85-175644] p 17 N85-74026
- SRIVASTAVA, JAIDEEP
Precision-time tradeoffs: A paradigm for processing statistical queries on databases [DE88-012024] p 60 N89-11408
- STALLCUP, SCOTT S.
The Environment for Application Software Integration and Execution (EASIE), version 1.0. Volume 2. Program integration guide [NASA-TM-100574] p 60 N89-13995
- STAMMERS, S. M.
TIS: An intelligent gateway computer for information and modeling networks. Overview [DE83-017986] p 20 N84-14067
- STAR, J. L.
NASA pilot land data system p 68 N84-31741
Remote Sensing Information Sciences Research Group, Santa Barbara Information Sciences Research Group, year 3 [NASA-CR-179769] p 72 N86-32663
- STAR, JEFFREY L.
Knowledge-based image data management - An expert front-end for the BROWSE facility p 35 A89-41158
- STAUFFER, B.
Computer security acquisition management [AIAA PAPER 86-2774] p 106 A87-18863
- STAVELAND, L.
Memory and subjective workload assessment p 52 N86-32433

- STEDRY, STEVEN P.**
Knowledge-based network operations p 34 A89-33679
- STEELE, W. V.**
Thermodynamics of materials in the range C10-C16 data base reference manual [DE86-001244] p 76 N89-18018
- STEFANIKI, IRENE M.**
Computer Science and Statistics. Proceedings of the 18th Symposium on the Interface [AD-A181298] p 28 N89-13901
- STENAUER, D. D.**
Security of personal computer systems. A management guide [PB85-181040] p 109 N85-24793
- STENGEL, ROBERT F.**
Investigation of air transportation technology at Princeton University, 1983 p 58 N87-18528
- STENNER, R. D.**
Assurance Program for Remedial Action (APRA) microcomputer-operated bibliography management system [DE85-008783] p 95 N86-16155
- STERMER, R. L.**
Optical Information Processing for Aerospace Applications 2 [NASA-CP-2302] p 67 N84-22472
- STICKEL, M. E.**
Research on interactive acquisition and use of knowledge [AD-A131306] p 35 N84-11823
Research on interactive acquisition and use of knowledge [AD-A137436] p 36 N84-20270
- STILWELL, R. G.**
Keeping the nation's secrets. A report to the Secretary of Defense by the Commission to Review DoD Security Policies and Practices [AD-A161968] p 110 N86-24562
- STODDARD, M. L.**
Modeling the user in intelligent user interfaces [DE84-012884] p 50 N84-14795
- STOMES, DAVID M.**
Knowledge-based image data management. An expert front-end for the BROWSE facility p 35 A89-41158
- STORCH, NANCY**
A new approach to system testing [DE89-008890] p 30 N89-23195
- STRAT, THOMAS M.**
Core knowledge system. Storage and retrieval of inconsistent information p 45 N89-23132
- STRAUCH, JOHN**
GRAPS (Graphical Plotting System) user's guide. A graphical plotting system for displaying scientific and engineering data [AD-A202583] p 77 N89-21559
- STRAWBER, P. R.**
Towards an ideal database server for office automation environments [AD-A148184] p 7 N85-17742
- STRUBE, M. M.**
Thermodynamics of materials in the range C10-C16 data base reference manual [DE86-001244] p 76 N89-18018
- SU, S. Y. W.**
Incorporating knowledge rules in a semantic data model. An approach to integrated knowledge management p 32 A87-18697
- SUBRAMANIAN, V.**
A knowledge based system approach to document retrieval p 32 A87-18708
- SUGAR, ROSS**
The evaluation and extension of TAE in the development of a user interface management system p 53 N87-23158
- SULLIVAN, EDWARD C.**
IUE archived spectra [NASA-TM-100715] p 101 N89-15829
- SUMMERTON, J. E.**
Key considerations in contingency planning for secure space flight ground control centers p 105 A85-42596
- SUMMIT, ROGER K.**
Technology advances for information access. Prospects and impact [AIAA PAPER 89-0849] p 91 A89-25618
- SUTEDJO, B.**
Data dictionary design as a stepping-stone to DBMS (Data Base Management System) implementation in the Indonesian Army Data Collecting and Processing Service [AD-A152101] p 84 N85-27752
- SUTTON, ERNEST B.**
National space policy [AD-A202644] p 16 N89-21711
- SUTTON, S.**
Integrity mechanisms in a secure UNIX. Gould UTX/32S [AIAA PAPER 86-2761] p 105 A87-18854
- SWEZEY, R. W.**
Human Factors Society, Annual Meeting, 29th, Baltimore, MD, September 29-October 3, 1985, Proceedings. Volumes 1 & 2 p 47 A86-33776
- SYNDER, C. E.**
Life cycle management handbook [DE89-004315] p 15 N89-17545
- SZCZUR, MARTHA R.**
The Transportable Applications Environment. An interactive design-to-production development system p 50 A89-29067
- ## T
- TABOR, A. R.**
International banking of satellite and in-situ wave data by the Marine Information and Advisory Services (MIAS) p 69 N85-12434
- TALBERT, L. R.**
Interactive information environments. A plan for enabling interdisciplinary research [RAND/N-2115] p 6 N84-33284
- TALLEY, C. R.**
Search and retrieval of office files using dBASE 3 [NASA-TM-86550] p 10 N86-30378
- TAO, JIANYI**
Protocol interoperability between DON and ISO (Defense Data Network and International Organization for Standardization) protocols [AD-A206582] p 31 N89-26777
- TARRANT, P. M.**
Automated library systems and document tracking systems: Commercial software alternatives, volume 1 [DE89-007718] p 102 N89-21706
- TAYLOR, JAMES H.**
A data-base management scheme for computer-aided control engineering p 33 A88-54484
- TAYLOR, RICHARD L.**
The Engineer Studies Center guide to research and data collection [AD-A169071] p 13 N88-23680
- TENOPPEL, C.**
Retrieval performance in a full text journal article database p 94 N85-27747
- THACHER, DAVID J.**
Maintaining outer space for peaceful purposes through international cooperation p 2 A89-12104
- THISTED, RONALD A.**
Tools for data analysis management p 60 N89-13919
- THODE, W. F.**
Development of a computer-managed readiness assessment system [AD-A162931] p 71 N86-24215
- THOMA, G.**
Videotex premastering facility. Technical evaluation [PB84-135821] p 20 N84-20840
- THOMAS, CATHY A.**
A program interface prototype for a multimedia database incorporating images [AD-A206439] p 45 N89-24226
- THOMAS, J. L.**
TIS. An intelligent gateway computer for information and modeling networks. Overview [DE83-017986] p 20 N84-14067
- THOMAS, T.**
Integrity mechanisms in a secure UNIX. Gould UTX/32S [AIAA PAPER 86-2761] p 105 A87-18854
- THOMPSON, PAUL**
Subjective probability, combination of expert opinion and probabilistic approaches to information retrieval p 74 N88-13085
- THORNDYKE, P. W.**
An architecture for heuristic control of real-time processes p 57 N89-26470
- TICHLER, J. L.**
Acquisition, use and archiving of real-time data [DE86-014769] p 25 N87-18282
- TILL, L. E.**
Data management of a multilaboratory field program using distributed processing [DE86-014770] p 73 N87-18465
- TILL, L. E.**
Air Force geographic information and analysis system [DE86-001420] p 74 A86-18505
- TOLCOTT, MARTIN A.**
A personalized and prescriptive decision aid for choice from a database of options [AD-A188726] p 59 N88-20820
- TOMPKINS, F. G.**
Guidelines for developing NASA (National Aeronautics and Space Administration) ADP security risk management plans [NASA-CR-173564] p 108 N84-26317
Guidelines for development of NASA (National Aeronautics and Space Administration) computer security training programs [NASA-CR-173562] p 108 N84-26318
Guidelines for contingency planning NASA (National Aeronautics and Space Administration) ADP security risk reduction decision studies p 108 N84-30737
NASA guidelines for assuring the accuracy and appropriateness of security safeguards in sensitive applications [NASA-CR-175489] p 109 N85-21593
Guidelines for certification of exo-atmospheric systems [NASA-CR-174080] p 111 N85-73325
- TOMPKINS, FREDERICK G.**
Protecting sensitive systems and data in an open agency [AIAA PAPER 87-3092] p 107 A88-26213
- TOWN, B. T.**
The success or failure of management information systems: A theoretical approach [DE87-007802] p 85 N87-24233
- TORTORA, ROBERT D.**
Computer-aided survey methods p 86 N89-13954
- TOTSCH, J. P.**
Implementing automated information systems in the Air Force [AD-A143398] p 6 N84-33288
- TOWSLEY, DON**
Resource contention management in parallel systems [AD-A206809] p 32 N89-26332
- TRAIN, R. E.**
Corporate use of information regarding natural resources and environmental quality [PB84-222736] p 69 N85-12794
- TRAN, DUC T.**
DOD Gateway Information System (DGIS) common command language. Prolog knowledge base profile. Common command language report no 3 [AD-A186150] p 99 N88-18574
- TRAN, DUC THIEN**
DoD Gateway Information System (DGIS) common command language. The first prototyping and the decision for artificial intelligence [AD-A185950] p 39 N88-15725
- TRAN, K. T.**
Design, test, and evaluation of an Air Force environmental model and data exchange [AD-A143226] p 68 N84-33060
- TREINSH, L.**
Methods of downloading to user institutions p 24 N86-29298
- TREINSH, L. A.**
The pilot climate data system p 63 A86-20669
- TRIANTAFYLLOPOULOS, SPIROS**
KARL: A Knowledge-Assisted Retrieval Language [NASA-CR-184529] p 43 N89-14969
General specifications for the development of a USL NASA PC H and D statistical analysis support package [NASA-CR-184537] p 15 N89-14977
- TRINH, T. T.**
Implementation of multifunction information systems at three Navy facilities [AD-A157797] p 84 N86-18153
- TRIVEDI, MOHAN M.**
Applications of artificial intelligence VI, Proceedings of the Meeting, Orlando, FL, Apr 4-6, 1988 [SPIE-937] p 34 A89-33677
- TRIVISON, DONNA**
Experiments on the cognitive aspects of information seeking, and information retrieving [PB87-157699] p 38 N87-24238
- TRUELOVE, J. A.**
Schema-based theory of information presentation for distributed decision making [AD-A183150] p 58 N86-25992
- TRUSZKOWSKI, WALTER F.**
Artificial intelligence costs, benefits, and risks for selected spacecraft ground system automation scenarios p 33 A89-21803
- TUCKER, RICHARD W.**
An architecture for integrating distributed and cooperating knowledge-based Air Force decision aids p 44 N89-19841
- TURTANOV, N. V.**
Description of a tentative US-USSR common communication format [DE86-004676] p 96 N86-25681

TYRA, N. W.

A systematic method for evaluating security requirements compliance p 105 A85-42597

U

UNDERWOOD, PHILLIP

Application developer's tutorial for the CSM testbed architecture [NASA-CR-181732] p 60 N89-14473

URENA, J. L.

Concepts for a global resources information system p 18 A86-20668

V

VAN METER, STEVEN D.

Space Station Program threat and vulnerability analysis [AIAA PAPER 87-3062] p 107 A88-26210

VANETTEM, D.

Avionics Data Base users manual [AD-A153810] p 69 N85-28942

VANHOESENDALE, JOHN

Compiling high level constructs to distributed memory architectures [NASA-CR-181825] p 30 N89-24058

VEATCH, JOHN D.

Space Station Program threat and vulnerability analysis [AIAA PAPER 87-3062] p 107 A88-26210

VERMILLION, C.

Bangladesh Agro-Climatic Environmental Monitoring Project p 79 N89-26121

VED, J. R.

Some approach to ATE documentation p 62 A85-26824

VITULLO, M.

Executive information system [DE84-015355] p 63 N85-13675

VOELZ, STEPHEN A.

A multi-spectral analysis system using large databases p 58 A89-27177

VOGEL, FREDERIC A.

Computer-aided survey methods p 86 N89-13954

VOLLMAN, T. E.

Generic Ada code in the NASA space station command, control and communications environment p 29 N89-16341

VONDRAN, R. F.

The function of report components in the screening and reading of technical reports p 90 A84-45547

VONHOLLE, JOSEPH C.

IMIS Integrated Maintenance Information System. A maintenance information delivery concept p 65 N88-17207

VOS, ROBERT G.

The integrated analysis capability (IAC Level 2.0) p 19 A89-12180

W

WADE, D. J.

Using bar code technology to enhance classified document accountability [DE87-000760] p 98 N87-21739

WADE, DONALD J.

Using bar code technology to enhance classified document accountability p 112 N88-70733

WAGNER, R. E.

An approach to autonomous attitude control for spacecraft [AAS PAPER 88-004] p 33 A89-20833

WALLGREN, KEN

NASA Information Sciences and Human Factors Program [NASA-TM-87569] p 53 N87-22410

WALLS, J. T.

On designing a case-based system for expert process development p 45 N89-24847

WALTER, G. D.

Information Management in the Department of Defense The role of libraries [AD-A130345] p 80 N85-70560

WALTON, JAMES S.

ExpertVision - A video-based non-contact system for motion measurement p 35 A89-45136

WANG, T. J.

Guide to human factors information sources [AD-A149102] p 52 N85-19649

WANTLAND, R. H.

Management information system for engineering [DE84-001655] p 81 N84-14984

WARE, W. H.

Information systems, security and privacy [RAND/P-6930] p 107 N84-21402

WASHBURN, D. K.

Assurance Program for Remedial Action (APRA) microcomputer-operated bibliography management system [DE85-008763] p 95 N86-18155

WASICKO, DICK

NASA Information Sciences and Human Factors Program [NASA-TM-87569] p 53 N87-22410

WASSON, R. L.

Fight stations and offices of the future - How similar will they be p 46 A84-15762

WATSON, L.

Computer resource management technology program (PE 6474U) Task no 9: Advanced user authentication [PB88-183086] p 111 N88-25163

WATTAWA, SCOTT L.

The second generation intelligent user interface for the crustal dynamics data information system p 34 A89-21810

The intelligent user interface for NASA's advanced information management systems p 39 N86-16424

The second generation intelligent user interface for the crustal dynamics data information system p 40 N88-30352

WATTS, R. L.

Technology transfer is opportunity transfer [DE85-018622] p 114 N86-17230

WEDDLE, DANNY

Satisfying the information requirements of an aircraft T&E center p 64 A87-49213

WEIR, T. E.

MARC (Machine Readable Catalog) format and life cycle tracking at the National Archives. A study [PB87-126256] p 11 N87-21737

WEISCHDEL, R. M.

Automated Information Management Technology (AIM-TECH) Considerations for a technology investment strategy [AD-A151139] p 38 N86-20173

WEISS, J. A.

Coping with legacy factors p 19 A89-12176

WEISS, JAMES R.

Telescience, an operational approach to science investigation [AF PAPER 88-011] p 2 A89-17630

WEISS, STEPHEN F.

A hypertext writing environment and its cognitive basis [AD-A188179] p 54 N88-18298

WEITZENKAMP, SCOTT M.

A multiprocessing architecture for real-time monitoring p 29 N89-15597

WELLS, J. D.

IBM's token-ring LAN (Local-Area Network) A base-level communications solution [AD-A143446] p 21 N84-33063

WESCOURT, KEITH T.

System integration of knowledge-based maintenance aids p 42 N89-14768

WEST, DONALD K.

IUE archived spectra [NASA-TM-100715] p 101 N89-15829

WESTBROOK, J.

Materials Information for Science and Technology (MIST) Project overview Phase 1 and 2 and general considerations [DE87-006799] p 73 N87-23312

WESTBROOK, J. H.

Prototype material properties data network [NASA-TM-89243] p 24 N86-33208

WETEKAMM, JULES

Electronic data generation and display system p 61 N89-19891

WHARTON, STEPHEN W.

The Land Analysis System (LAS) - A general purpose system for multispectral image processing p 64 A87-53230

WHINSTON, A. B.

Developments in decision support systems p 57 A85-31792

WHITE, A.

Strawman Definition for the Space Station Information System Network Security [AIAA PAPER 86-2780] p 106 A87-18860

WHITE, C. C., III

ARIADNE - A knowledge-based interactive system for planning and decision support p 57 A84-33463

WHITE, R. P.

A natural language interface for a PROLOG database [AD-A138071] p 51 N84-22254

WHITELAW, V.

Space Station Information System integrated communications concept [AIAA PAPER 87-2228] p 12 N87-48808

Space Station Information System requirements for integrated communications [AIAA PAPER 87-2229] p 18 A87-48807

WICKENS, CHRISTOPHER

Effects of display proximity and memory demands on the understanding of dynamic multidimensional information p 48 A87-33044

WIEDERHOLD, C.

Databases for statistics p 72 N86-26000

WIENER, EARL L.

Fallible humans and vulnerable systems: Lessons learned from aviation p 50 A86-46511

WILBECK, J. S.

Sandia computerized shock compression bibliographical database [DE85-018542] p 70 N86-17222

WILKINSON, JAMES E.

The use of portable microcomputer as a data collector tool to support integrated simulation support environments A concept [AD-A196414] p 14 N89-11403

WILLIAMS, M.

Bangladesh Agro-Climatic Environmental Monitoring Project p 79 N89-26121

WILLIAMS, R. B.

Space Station Information System Concepts and international issues [IAF PAPER 87-76] p 64 A86-15851

WILLIAMS, WINFRED L.

Concurrent Image Processing Executive (CIPE) [NASA-CR-185480] p 31 N89-25619

WILLIAMSON, MICHAEL L.

An implementation of a data derivation facility for the graphics language for database [AD-A207363] p 89 N89-26442

WILLIAMSON, RAY A.

Gathering news from space p 113 A86-19831

WILLIGES, R. C.

Information retrieval strategies in a file search environment p 90 A84-44092

WILSON, L. R.

Design considerations for human-computer dialogues [AD-A158265] p 57 N86-70447

WILSON, REID

Shared resource control between human and computer p 57 N89-26580

WILSON, S.

Space station integrated propulsion and fluid systems study [NASA-CR-170393] p 75 N89-12561

WILSON, W. F.

Security concepts for microprocessor based key generator controllers [AD-A155194] p 111 N85-74069

WINKLER, L.

Guide to sharing personal computer resources via local area networks, revised [DE86-018088] p 25 N87-20772

WINOGRAD, T.

Computer software for working with languages p 46 A84-44671

WINTER, C.

Executive information system [DE84-015355] p 63 N85-13675

WISKERCHEN, M.

Action Information Management System (AIMS) A user's view p 82 N84-21425

WITGES, S. A.

Examining learning theory of online information retrieval systems and applications in computer-aided instruction Implications for the Defense Technical Information Center's computer-aided instruction [AD-A159001] p 38 N86-15213

WITGES, SHIRLEY A.

Proceedings of the 2nd Conference on Computer Interfaces and Intermediaries for Information Retrieval [AD-A174000] p 53 N87-18657

WITHINGTON, P. T.

The trusted function in secure decentralized processing [AD-A155252] p 111 N85-74267

WITZKE, E. L.

Elements of a proposed security methodology for networks of computers [DE87-008769] p 110 N87-23152

WOLMAN, Y.

International information networks for material properties Revision 1 [DE85-007412] p 22 N85-27572

WOLMAN, D. J.

Avionics Data Base users manual [AD-A153810] p 69 N85-28942

WONG, ALBERT

Toward highly portable database systems: Issues and solutions

[AD-A174635] p 11 N87-20131

WONG, D. Q.

Integrated structural analysis for rapid design support

p 18 A88-18630

WOOD, C. C.

Livermore risk analysis methodology: A quantitative approach to management of the risk associated with the operation of information systems

[DE87-006828] p 110 N87-24232

WOOLF, BEVERLY

Plan recognition, knowledge acquisition and explanation in an intelligent interface

p 42 N89-13191

WOOLRIDGE, K. W.

DTIC 2000: A corporate plan for the future

[AD-A143900] p 6 N84-34327

WRIGHT, KATHLEEN

Tire vibrations of scientific and technical literature: A guide to their location

p 99 N88-23686

WRIGHT, MARY A.

The computational structural mechanics testbed architecture. Volume 4. The global-database manager GAL-DBM

[NASA-CR-178387] p 76 N89-16195

WRIGHT, R. E.

Potential uses of probabilistic risk assessment techniques for space station development

p 104 A85-42595

WRIGHT, R. GLENN

Automated knowledge base development from CAD/CAE databases

p 43 N89-15585

WU, CHUAN-LIN

Knowledge-based network operations

p 34 A89-33679

Y**YASTROP, GLORIA**

The effects of different database formats on information retrieval

p 58 A88-35463

YATES, V.

Organization as information processing systems: Toward a model of the research factors associated with significant research outcomes

[AD-A185518] p 10 N86-33200

YEH, SHOW-WAY

Knowledge-based network operations

p 34 A89-33679

YEH, Y. Y.

Memory and subjective workload assessment

p 52 N86-32983

YIP, J.

Integrity mechanisms in a secure UNIX - Gould UTX/32S

[AIAA PAPER 86-2731] p 105 A87-18854

YORCHAK, J. P.

EXAMINE - An expert system to mediate human-computer dialogs

p 47 A86-23740

YOLANG, L.

Information services: Pros and cons

p 97 N86-28797

YOW, R. P.

NASA metrology information system. A NEMS subsystem

p 68 N84-33479

Z**ZACCARDO, K. F.**

Analysis of the use of Defense Technical Information Center resources by research and development centers and laboratories in the US Army

[AD-A188441] p 97 N86-33203

ZARCHAN, PAUL

How an engineer acquires and uses information through the DIALOG system

[AIAA PAPER 89-0851] p 91 A89-25620

ZHUKOVETS, O. V.

Description of a tentative US-USSR common communication format

[DE86-004876] p 96 N86-25681

ZOCH, DAVID

Integrated resource scheduling in a distributed scheduling environment

p 80 A89-21808

ZUBER, LAURA C.

Risk assessment of compressed natural gas-fueled vehicle operations, phase 1

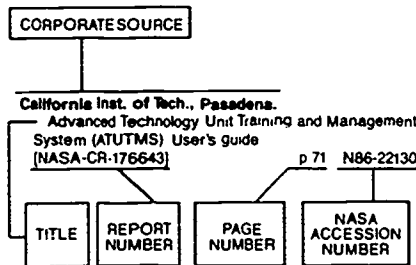
[PB89-188841] p 104 N89-27196

ZYDA, M. J.

User interface design for two dimensional polygonally encoded geological survey maps

[AD-A170612] p 53 N87-13840

Typical Corporate Source Index Listing



Listings in this index are arranged alphabetically by corporate source. The title of the document is used to provide a brief description of the subject matter. The page number and the accession number are included in each entry to assist the user in locating the abstract in the abstract section. If applicable, a report number is also included as an aid in identifying the document.

A

- Advanced Technology, Inc., Reston, VA.**
DLA: Data/data base administration analysis
[AD-A153031] p 8 N85-28379
- Aerospace Corp., Los Angeles, CA.**
Spacecraft environmental anomalies expert system
p 43 N89-15507
- Aerospace Structures Information and Analysis Center, Wright-Patterson AFB, OH.**
Application of new technologies to DTIC document processing
[AD-A189778] p 99 N88-22823
- Air Command and Staff Coll., Maxwell AFB, AL.**
IBM's token-ring LAN (Local-Area Network) A base-level communications solution
[AD-A143446] p 21 N84-33063
- Implementing automated information systems in the Air Force
[AD-A143398] p 6 N84-33288
- Managing microcomputers: A survival kit for functional managers
[AD-A144006] p 21 N84-34316
- Computer-aided writing
[AD-A192516] p 54 N88-26837
- Air Force Academy, CO.**
Management information systems: A need for human factors
[AD-P00313] p 51 N84-28452
- Air Force Geophysics Lab., Hanscom AFB, MA.**
The Remote Atmospheric Probing Information Display (RAPID) system
[AD-A196314] p 75 N89-10500
- Air Force Human Resources Lab., Wright-Patterson AFB, OH.**
IVIS: Integrated Maintenance Information System: A maintenance information delivery concept
p 85 N88-17207

- Air Force Inst. of Tech., Wright-Patterson AFB, OH.**
The automated information retrieval system in the field of science and science Policy-AWION
[AD-A135585] p 66 N84-19174
- A natural language interface for a PROLOG database
[AD-A138071] p 51 N84-22254
- An evaluation of two reliability and maintainability information systems
[AD-A143438] p 58 N84-33290
- Development of a user support package for CPESIM 2: a computer simulation for CPE (Computer Performance Evaluation) use
[AD-A151899] p 22 N85-26170
- Content-Addressable Memory manager: Design and evaluation
[AD-A164037] p 23 N86-25133
- A contextual postprocessing expert system for English sentence reading machines
[AD-A163951] p 96 N86-26026
- A structural optimization method for information resource management
[AD-A166420] p 59 N86-29722
- The use of portable microcomputer as a data collection tool to support integrated simulation support environments: A concept
[AD-A196414] p 14 N89-11403
- Design and implementation of a controller and a host simulator for a relational replicated database system
[AD-A198951] p 28 N89-14176
- Development of a dBase III plus database for office automation within the Department of Logistics Management, School of Systems and Logistics
[AD-A202628] p 16 N89-22354
- Planning and controlling the acquisition costs of Air Force information systems
[AD-A204421] p 16 N89-22528
- Structured requirements determination for information resources management
[AD-A204764] p 62 N89-22532
- A database management system for computer-aided digital circuit design
[AD-A206047] p 79 N89-24066
- Air Force Space Div., Los Angeles, CA.**
The microcomputer in the acquisition environment
[AD-P002748] p 37 N84-23295
- Air Force Systems Command, Wright-Patterson AFB, OH.**
Mechanized contract document preparation and abstract system
[AD-P002750] p 4 N84-23297
- The acquisition management information system: Friend or foe?
[AD-P002751] p 67 N84-23298
- Air Force Wright Aeronautical Labs., Wright-Patterson AFB, OH.**
Management of complex information in support of evolving autonomous expert systems
[AD-A186680] p 39 N88-17337
- Air War Coll., Maxwell AFB, AL.**
National space policy
[AD-A202644] p 16 N89-21711
- Alabama A & M Univ., Huntsville.**
Planning actions in robot automated operations
p 43 N89-15559
- Alabama Univ., Huntsville.**
A data analysis expert system for large established distributed databases
p 33 A89-11718
- Allied Bendix Corp., Kansas City, MO.**
Laboratory technical information system analysis phase
[DE85-018311] p 95 N86-17219
- Keeping track of archived drawings: A case study
[DE86-003129] p 71 N86-24572
- Alpha Omega Group, Inc., Harvard, MA.**
Functional and database architecture design
[AD-A136275] p 3 N84-19169
- American Inst. of Aeronautics and Astronautics, New York, NY.**
Benefits of scientific and technical information services for aerospace and defense
p 98 N87-26677

- American Metric Council, Washington, DC.**
Guidelines for metric transition of software
[PB86-240215] p 17 N87-70232
- American Society for Engineering Education, Washington, DC.**
Design of graphic displays in computerized systems
[AD-A161890] p 71 N86-24227
- Applied Modeling, Inc., Woodland Hills, CA.**
Design, test, and evaluation of an Air Force environmental model and data exchange
[AD-A143228] p 68 N84-33060
- Applied Systems Inst., Inc., Washington, DC.**
Avionics Data Base users manual
[AD-A153810] p 69 N85-28942
- Argonne National Lab., IL.**
Recommended documentation for computer users at ANL
[DE84-01F285] p 7 N85-15434
- Guide to sharing personal computer resources via local area networks, revised
[DE86-016088] p 25 N87-20772
- ELEFUNT test results under FORTRAN-PLUS on the active memory technology DAP 510-8
[DE88-017264] p 28 N89-14700
- A project for developing a linear algebra library for high-performance computers
[DE89-007501] p 78 N89-22374
- Arinc Research Corp., Annapolis, MD.**
Develop an automated Data Base Management System (DBMS): Report on DBMS software and user's guide
[DE88-015996] p 27 N89-10674
- Arizona State Univ., Tempe.**
Subjective workload and individual differences in information processing abilities
[SAE PAPER 841491] p 47 A86-26011
- Arizona Univ., Tucson.**
Information search in judgment tasks: The effects of unequal cue validity and cost
[AD-A141712] p 5 N84-29437
- Functional description and formal specification of a generic gateway
[AD-A206581] p 31 N89-26776
- Protocol interoperability between DDN and ISO (Defense Data Network and International Organization for Standardization) protocols
[AD-A206582] p 31 N89-26777
- Army Cold Regions Research and Engineering Lab., Hanover, NH.**
A user's guide for the BIBSORT program for the IBM-PC personal computer
[AD-A157936] p 94 N86-12995
- Army Construction Engineering Research Lab., Champaign, IL.**
An interactive soils information system: Users manual
[AD-A133480] p 66 N84-16073
- Army Engineer Studies Center, Fort Belvoir, VA.**
The Engineer Studies Center guide to research and data collection
[AD-A189971] p 13 N88-23680
- Assistant Secretary of Defense (Comptroller), Washington, DC.**
DOD (Department of Defense) Procedures for Management of Information Requirements
[PB87-155495] p 12 N87-24227
- Aurora Associates, Inc., Washington, DC.**
Future information technology, 1984
telecommunications
[PB85-165850] p 22 N85-26173
- Future information technology, 1984
telecommunications
[NBS/SP-500/119] p 22 N85-27762

B

- Battelle Columbus Labs., OH.**
Evaluation of the vocabulary switching systems
[PB85-127157] p 93 N85-22260
- Battelle Pacific Northwest Lab., Sequim, WA.**
Development of a micrometeorological and tracer data archive
[PB87-110490] p 73 N87-19845

- Bell Communications Research, Inc., Holmdel, NJ.**
A data viewer for multivariate data p 28 N89-13921
- Bell Telephone Labs., Inc., Murray Hill, NJ.**
Evaluating for information center planning p 15 N89-11632
- Boeing Aerospace Co., Huntsville, AL.**
Foundation: Transforming data bases into knowledge bases p 39 N88-16423
- Boeing Aerospace Co., Kennedy Space Center, FL.**
Electronic data generation and display system p 61 N89-19891
- Boeing Aerospace Co., Seattle, WA.**
The integrated analysis capability (IAC Level 2.0) p 19 A89-12180
Natural language processing and advanced information management p 88 N89-26602
- Boeing Computer Services Co., Seattle, WA.**
Managing geometric information with a data base management system p 67 N84-22211
- Bolt, Beranek, and Newman, Inc., Cambridge, MA.**
KREME (Knowledge Representation, Editing and Modeling Environment): A user's introduction, phase 1 (AD-A188906) p 39 N88-20052
- Brigham Young Univ., Provo, UT.**
Economic value of consumer information: A selected, annotated bibliography p 7 N85-13673
- Brookhaven National Lab., Upton, NY.**
The international scope of data evaluation (DE85-005953) p 8 N85-30760
Acquisition, use and archiving of real-time data (DE86-014769) p 25 N87-18282
Data management of a multilaboratory field program using distributed processing (DE86-014770) p 73 N87-18465
Data integration for a scientific field experiment (DE87-011302) p 74 N87-30211
The AGS Booster control system (DE88-013990) p 28 N89-14068
- California Inst. of Tech., Pasadena.**
Advanced Technology Unit Training and Management System (ATUTMS): User's guide (NASA-CR-176643) p 71 N86-22130
- California Univ., Berkeley.**
Astronomical data analysis from remote sites p 3 A89-27210
Subjective probability, combination of expert opinion and probabilistic approaches to information retrieval p 74 N88-13085
Precision-time tradeoffs: A paradigm for processing statistical queries on databases (DE88-012024) p 60 N89-11408
Multiple representation document development (AD-A197369) p 76 N89-13305
- California Univ., Berkeley, Lawrence Berkeley Lab.**
A user's guide to the socioeconomic environmental demographic information system (SEEDS) (AD-A168917) p 73 N87-12388
Materials Information for Science and Technology (MIST) Project overview Phase 1 and 2 and general considerations (DE87-006799) p 73 N87-23312
The future of intersite networking (DE87-007912) p 25 N87-24116
User's guide for the training database system version 2.1 (DE88-016653) p 80 N88-70023
User's guide for the ENGNODE database system for LBL engineering notes, version 1.2 (DE88-016652) p 80 N89-70024
- California Univ., Davis.**
A model for graphics interface tool development p 70 N85-34545
- California Univ., Los Angeles.**
Knowledge-based load leveling and task allocation in human-machine systems p 53 N86-32985
Reusing structured models via model integration (AD-A204652) p 30 N89-22369
Bibliographic coupling among scientific papers in biological research specialties p 103 N89-25771
Secure distributed processing systems (AD-A134935) p 111 N84-73042
- California Univ., San Diego.**
Inductive information retrieval using parallel distributed computation (AD-A142712) p 36 N84-31050
Interactive activation models of perception and comprehension (AD-A161362) p 52 N86-21143

- California Univ., San Diego, La Jolla.**
Three-dimensional computer graphics brain-mapping project (AD-A197053) p 41 N89-11435
- California Univ., Santa Barbara.**
Knowledge-based image data management - An expert front-end for the BROWSE facility p 35 A89-41158
NASA plot land data system p 68 N84-31741
Remote Sensing Information Sciences Research Group, Santa Barbara Information Sciences Research Group, year 3 (NASA-CR-179769) p 72 N86-32863
- Carlson Associates, Inc., Fairfax, VA.**
Advanced human factors engineering tool technologies (AD-A189390) p 54 N88-20825
- Carnegie-Mellon Univ., Pittsburgh, PA.**
Metaphor and common-sense reasoning (AD-A131423) p 35 N84-11756
Machine learning: Part 1 A historical and methodological analysis (AD-A131424) p 36 N84-11824
Beyond associations: Strategic components in memory retrieval (AD-A160783) p 52 N86-18965
The role of databases in knowledge-based systems (AD-A166365) p 38 N86-30573
The role of working memory in language comprehension (AD-A192721) p 54 N88-26805
Software process modeling (AD-A197137) p 27 N89-13154
ISTAR evaluation (AD-A201345) p 87 N89-19903
- Catholic Univ. of America, Washington, DC.**
The function of report components in the screening and reading of technical reports p 90 A84-45547
- Center for Social and Economic Issues, Ann Arbor, MI.**
Implementing and managing change: A guide for assessing information technology (DE88-000035) p 12 N88-11571
- Chicago Univ., IL.**
Tools for data analysis management p 60 N89-13919
- City Univ. of New York, Staten Island.**
Resident database interfaces to the DAVID system, a heterogeneous distributed database management system (NASA-CR-184615) p 87 N89-14946
- Civil Engineering Squadron, Sheppard AFB, TX.**
Air Force geographic information and analysis system (DE88-001420) p 74 N88-18505
- Clarkson Univ., Potsdam, NY.**
Global updates in integration of distributed databases p 29 N89-15773
- Coast Guard, Washington, DC.**
U.S. Coast Guard Information Center plan (PB85-175644) p 17 N85-74028
- Colgate Univ., Hamilton, NY.**
Planner system for the application of indicators and warning p 42 N89-13188
- Colorado State Univ., Fort Collins.**
Computer Science and Statistics: Proceedings of the 18th Symposium on the Interface (AD-A191296) p 28 N89-13901
- Colorado Univ., Boulder.**
Toward a complete EOS data and information system p 66 A89-31941
Self-adaptive data bases (AD-A186414) p 26 N88-15729
Information systems for the Space Station ERA p 101 N89-18758
- Commerce Dept., Washington, DC.**
Five-year plan for meeting the automatic data processing and telecommunications needs of the Federal Government, Volume 1: Planning strategies (PB84-214501) p 21 N85-12777
Five-year plan for meeting the automatic data processing and telecommunications needs of the Federal Government, Volume 2: Major information technology systems acquisition plans of Federal executive agencies, 1984-1989 (PB84-214519) p 21 N85-12778
- Committee on Armed Services (U.S. House).**
Technology transfer (H-REPT-98-15) p 4 N84-25528
- Committee on Government Operations (U.S. House).**
Paperwork Reduction Act amendments of 1983 (H-REPT-98-147) p 3 N84-11989
- Committee on Science, Space and Technology (U.S. House).**
International Space Policy for the 1990s and Beyond, no 86 (GPO-C-100) p 114 N89-12496

- Committee on Science and Technology (U.S. House).**
The role of information technology in emergency management (GPO-29-457) p 69 N84-34319
Computer and communications security and privacy (GPO-39-741) p 109 N85-21994
Computer security policies (GPO-52-154) p 109 N86-15919
Technology transfer (GPO-49-539) p 114 N86-21458
- Committee on Small Business (U.S. House).**
Paperwork Reduction Act of 1980 (S-REPT-98-479) p 4 N84-24504
- Committee on the Judiciary (U.S. House).**
Computer crime (GPO-30-544) p 109 N85-19691
- Compuchem, Inc., Hayward, CA.**
Design and development of a database for spectral data and analysis results (DE87-011323) p 74 N88-11564
- Computer Corp. of America, Cambridge, MA.**
A database management capability for Ada p 77 N89-16371
- Computer Sciences Corp., Beltsville, MD.**
Space station Platform Management System (PMS) replanning using resource envelopes p 86 N89-10071
- Computer Sciences Corp., Falls Church, VA.**
Restricted access processor - An application of computer security technology p 105 A85-42600
- Computer Sciences Corp., Gulf Breeze, FL.**
EPALIT: A data management system applied to the control and retrieval of technical reports (PB85-193068) p 94 N85-35828
- Computer Sciences Corp., Orlando, FL.**
Intercenter Problem Reporting and Corrective Action System (PRACAS) p 3 N84-21408
- Computer Sciences Corp., Silver Spring, MD.**
The Software Engineering Laboratory (NASA-CR-183455) p 89 N89-71121
- Computer Technology Associates, Inc., Englewood, CO.**
Sector suite man-machine functional capabilities and performance requirements (AD-A188881) p 52 N85-19647
- Computer Technology Associates, Inc., McLean, VA.**
The development of an intelligent user interface for NASA's scientific databases p 48 A87-28445
Automated cataloging and characterization of space-derived data p 91 A89-21812
- Congressional Research Service, Washington, DC.**
Public laws of the 98th Congress relating to information policy (CRS-TK-7885-F) p 114 N86-27130
- Corps of Engineers, Saint Paul, MN.**
Information systems plan (AD-A157911) p 84 N86-13227
- Council on Environmental Quality, Washington, DC.**
Corporate use of information regarding natural resources and environmental quality (PB84-222736) p 69 N85-12794

D

- Dataview, Inc., Orlando, FL.**
Algorithm for supporting views in the microcomputer environment (PB89-174155) p 32 N89-71248
- Decision Science Consortium, Inc., Falls Church, VA.**
A personalized and prescriptive decision aid for choice from a database of options (AD-A188726) p 59 N88-20820
- Defense Applied Information Technology Center, Alexandria, VA.**
The DoD Gateway Information System (DGIS): The development toward artificial intelligence and hypermedia in common command language (AD-A203674) p 102 N89-20869
Fostering interaction of government, defense, and aerospace databases p 103 N89-23374
- Defense Technical Information Center, Alexandria, VA.**
DTIC 2000: A corporate plan for the future (AD-A143900) p 6 N84-34327
The flow of scientific and technical information in the US Army Research Laboratories (AD-A155050) p 9 N85-33043
Integrated bibliographic information system: Integrating resources by integrating information technologies (AD-A157700) p 95 N86-15211
Examining learning theory of online information retrieval systems and applications in computer-aided instruction: Implications for the Defense Technical Information Center's computer-aided instruction (AD-A159001) p 38 N86-15213

- The integrated bibliographic information system. Resource sharing tailored for local needs [AD-A161700] p 95 N86-21431
- The DOD gateway information system [AD-A161701] p 96 N86-21432
- How Ebenezer Scrooge and Peter Parker are helping shape DoD's Scientific and Technical Information Program [AD-A165640] p 96 N86-28779
- The DoD gateway information system: Prototype experience [AD-A166200] p 97 N86-30570
- An assessment of CD ROM (Compact Disk Read Only Memory) [AD-A164259] p 72 N87-11492
- Systematic corporate planning at DTIC (Defense Technical Information Center) [AD-A171525] p 11 N87-15802
- Proceedings of the 2nd Conference on Computer Interfaces and Intermediates for Information Retrieval [AD-A174000] p 53 N87-16657
- The DOD gateway information system directory of resources [AD-A174154] p 25 N87-16658
- Artificial intelligence developments re DOD Gateway Information System (DGIS) and Defense Applied Information Technology Center (DAITC) [AD-A181101] p 111 N87-27550
- DTIC (Defense Technical Information Center) model action plan for incorporating DGIS (DOD Gateway Information System) capabilities [AD-A181102] p 98 N87-27551
- Information analysis centers in the department of defense, revision [AD-A184002] p 98 N88-12420
- DoD Gateway Information System (DGIS) common command language: The first prototyping and the decision for artificial intelligence [AD-A185950] p 29 N88-15725
- DOD Gateway Information System (DGIS) common command language: Prolog knowledge base profile. Common command language report no. 3 [AD-A186150] p 99 N88-16574
- The Scientific and Technical Information Network (STINET) Foundation for evolution [AD-A189750] p 99 N88-22822
- Information retrieval systems evolve: advances for easier and more successful use p 100 N88-30462
- The Shared Bibliographic Input Network (SBIN): A summary of the experiment [AD-A133001] p 104 N84-75065
- Defense Technical Information Center, San Diego, CA. Prototype development of an information-sharing and decision support system for the manpower personnel and training community [AD-P003310] p 68 N84-28451
- Department of Agriculture, Washington, DC. Computer-aided survey methods p 86 N89-13954
- Department of Defense, Fort Meade, MD. Department of defense trusted computer system evaluation criteria [AD-A141304] p 108 N84-28498
- Department of Energy, Washington, DC. Information technology resources long-range plan, FY 1987-FY 1991 [DE86-010457] p 11 N86-33206
- Fastbus standard routines [DOE/ER-0367] p 29 N89-20645
- Information technology resources long-range plan FY90 to FY94 [DE89-007784] p 16 N89-22527
- Department of Energy/Contractors Micrographics and Information Management Association, Washington, DC. Proceedings of the 14th Annual Conference of the Department of Energy/Contractors Micrographics and Information Management Association [DE88-000239] p 104 N88-70731
- Department of the Air Force, Washington, DC. Information management expert systems p 87 N89-16407
- DOD Security Review Commission, Washington, DC. Keeping the nation's secrets: A report to the Secretary of Defense by the Commission to Review DoD Security Policies and Practices [AD-A181998] p 110 N86-24562
- Draper (Charles Stark) Lab., Inc., Cambridge, MA. Advanced Information Processing System (AIPS) proof-of-concept system functional requirements I/O network system services [NASA-CR-181481] p 12 N88-12412
- Drexel Univ., Philadelphia, PA. Evaluation of the National Library of Medicine's programs in the medical behavior sciences. Online searchers' reactions to database and vendor capabilities in the Medical Behavioral Sciences (MBS), study 4 [PB84-230523] p 93 N85-12798
- Du Pont de Nemours (E. I.) and Co., Alton, SC. Electronic Records Administration at the Savannah River Plant [DE87-014842] p 12 N88-12415
- ## E
- Economic Systems Analysis, Inc., Oak Ridge, TN. Technology Master List data base management system, user's manual [PB89-177802] p 89 N89-27590
- Edgerton, Germeshausen and Grier, Inc., Idaho Falls, ID. Electronic information delivery at the job site [DE89-009726] p 17 N89-27350
- Engineering Research Associates, Inc., Vienna, VA. Schema-based theory of information presentation for distributed decision making [AD-A163150] p 58 N86-25992
- Engineering Sciences Data Unit, London (England). The costs of not having refined information p 59 N86-28798
- Environmental Protection Agency, Las Vegas, NV. GEO-EAS (Geostatistical Environmental Assessment Software) user's guide [PB89-151252] p 89 N89-27261
- Environmental Protection Agency, Research Triangle Park, NC. Meteorological processor for regulatory models (MPRM-1.1) user's guide [PB89-127526] p 78 N89-22188
- Environmental Protection Agency, Washington, DC. Bibliography on information resources management [PB87-185997] p 12 N87-28458
- Essex Corp., Alexandria, VA. SARCSEST (human factors) p 55 N89-19830
- ## F
- Federal Aviation Administration, Atlantic City, NJ. LORAN C Offshore Flight Following (LOFF) in the Gulf of Mexico [AD-A197179] p 75 N89-12558
- Florida International Univ., Miami. Technology transfer for development of coastal zone resources. Caribbean experts examine critical issues p 77 N89-18749
- FMC Corp., Santa Clara, CA. System integration of knowledge-based maintenance aids p 42 N89-14768
- An architecture for heuristic control of real-time processes p 57 N89-26470
- ## G
- General Accounting Office, Washington, DC. Department of Energy's activities to limit distribution of certain unclassified scientific and technical information [PB84-189158] p 109 N84-32302
- Freedom of Information Act Noncompliance with affirmative disclosure provisions [AD-A168589] p 10 N86-33204
- Space operations NASA's use of information technology Report to the Chairman, Committee on Science, Space and Technology [GAO/IMTEC-87-20] p 11 N87-22551
- Space operations Testing of NASA's technical and management information system [GAO/IMTEC-88-28] p 101 N89-20859
- Telecommunications security and privacy p 111 N85-74342
- General Electric Co., Saint Petersburg, FL. Success with Data Management 4 at the DOE Princeton Plant [DE84-008021] p 82 N84-29802
- General Services Administration, Washington, DC. Five-year plan for meeting the automatic data processing and telecommunications needs of the Federal Government. Volume 1 Planning strategies [PB84-214501] p 21 N85-12777
- Five-year plan for meeting the automatic data processing and telecommunications needs of the Federal Government. Volume 2 Major information technology systems acquisition plans of Federal executive agencies, 1984-1989 [PB84-214519] p 21 N85-12778
- GS* automated information security [PMS-P-2100 1-CHGE-1] p 111 N85-72106
- GSA automated information security [PMS-P-2100.1] p 111 N85-72650
- Geo-Centers, Inc., Fort Washington, MD. EDITSPEC: A FORTRAN 77 program for editing and manipulating spectral data from the Varian CARY 2390 UV-VIS-NIR spectrophotometer [AD-A200352] p 29 N89-16389
- Geological Survey, Alexandria, VA. Federal Mineral Land Information System p 70 N85-35459
- George Mason Univ., Fairfax, VA. Technology transfer at DARPA. The Defense Advanced Research Projects Agency Executive summary [AD-A164503] p 10 N86-27110
- George Washington Univ., Washington, DC. Evaluation of expert systems - An approach and case study p 48 N87-16716
- Artificial intelligence costs, benefits, and risks for selected spacecraft ground system automation scenarios p 33 N89-21803
- Evaluating the appropriateness of microcomputers for litigation document management using the analytic hierarchy process p 69 N85-24788
- A design methodology for on-line menu-driven information retrieval systems p 96 N86-24558
- Data base development and research and editorial support [NASA-CR-183249] p 89 N89-28440
- Georgetown Univ., Washington, DC. Technology assessment: Methods for measuring the level of computer security [PB86-129954] p 110 N86-25140
- Georgia Inst. of Tech., Atlanta. Intent interfacing with a model-based operator's associate [RCPT-88-2] p 56 N89-20695
- OFM Tutor: An operator function model intelligent tutoring system p 56 N89-20696
- A survey of intelligent tutoring systems. Implications for complex dynamic systems p 56 N89-20697
- TRUSS: An intelligent design system for aircraft wings p 79 N89-25162
- Protocol interoperability between DDN and ISO (Defense Data Network and International Organization for Standardization) protocols [AD-A206582] p 31 N89-26777
- National STI (Scientific and Technical Information) system of Egypt: Implementation p 104 N84-74126
- Egyptian National System for Scientific and Technical Information: Design study [PB84-179423] p 80 N84-75767
- Grumman Aerospace Corp., Bethpage, NY. Space Station needs, attributes and architectural options, volume 2, book 3 Cost and programmatic [NASA-CR-173320] p 3 N84-18304
- ## H
- Hanford Engineering Development Lab., Richland, WA. Fundamentals of computer security [DE84-011476] p 108 N84-31989
- Harvard Univ., Cambridge, MA. Artificial intelligence techniques for retrospective help in data analysis p 42 N89-13915
- Hawaii Univ., Honolulu. Archiving and exchange of a computerized marine seismic database The ROSE data archive system [DE84-901453] p 69 N85-13677
- Hawaii Univ., Manoa. Influences on group productivity 2 Factors inherent in the person: A bibliographic synopsis [AD-A131015] p 50 N84-15790
- Henderson (Madeline M.), Bethesda, MD. Compilation of cooperative data element dictionary of five federal agencies' systems for processing of technical report literature [AD-A130797] p 92 N84-11059
- Horton (Forest W., Jr.), Washington, DC. Information resources management p 17 N89-23371
- Houston Univ., Clear Lake, TX. Distributing program entities in Ada p 29 N89-16295
- DEC Ada interface to Screen Management Guidelines (SMG) p 101 N89-16303
- Rdesign: A data dictionary with relational database design capabilities in Ada p 43 N89-16368
- Houston Univ., TX. I/O buffer performance in a virtual memory system [NASA-CR-185730] p 32 N89-71335
- Performance of a data base management system with partially locked virtual buffers [NASA-CR-185729] p 90 N89-71336

Hughes Aircraft Co., Long Beach, CA.
 Intelligent information retrieval from on-line technical documentation
 [AD-P003946] p 37 N85-11626

Human Engineering Labs., Aberdeen Proving Ground, MD.
 Human engineering guidelines for management information systems. Change 1
 [AC-A137808] p 81 N84-21104
 Guide to human factors information sources
 [AD-A149102] p 52 N85-19649

Idaho National Engineering Lab., Idaho Falls.
 Information resource management: An architectural concept/experience
 [DE88-015184] p 86 N89-14177
 Status of DOE information network modifications
 [DE89-005191] p 101 N89-20028

ITT Research Inst., Bartlesville, OK.
 Thermodynamics of materials in the range C10-C16 data base reference manual
 [DE88-001244] p 76 N89-16018

Illinois State Univ., Normal.
 Computer technologies and institutional memory
 p 55 N89-20062

Illinois Univ., Urbana.
 Artificial intelligence implications for information retrieval
 [AD-A131382] p 35 N84-11821
 Page indexing for textual information retrieval systems
 p 93 N84-32277
 Monotonically improving approximate answers to relational algebra queries
 [NASA-CR-184874] p 61 N89-20717

Illinois Univ., Urbana-Champaign.
 Retrieval performance in a full text journal article database
 p 94 N85-27747
 Access path optimization for network database retrieval
 p 94 N85-27749
 Design of an interface to an information retrieval network
 p 94 N85-27750

Indiana Univ., Bloomington.
 Information processing for better utilization: Assessing the CLER model as organizer for innovation diffusion and planned change information reported in selected studies in the ERIC system
 p 93 N85-12780

Institute for Computer Applications in Science and Engineering, Hampton, VA.
 Cumulative reports and publications through December 31, 1988
 [NASA-CR-181784] p 16 N89-20615
 Compiling high level constructs to distributed memory architectures
 [NASA-CR-181825] p 30 N89-24058
 I/O buffer performance in a virtual memory system
 [NASA-CR-185730] p 32 N89-71335
 Performance of a data base management system with partially locked virtual buffers
 [NASA-CR-185729] p 90 N89-71336

Institute of Gas Technology, Chicago, IL.
 On-line interactive database for the storage and rapid information retrieval of gas industry data
 [T86-900895] p 96 N86-28792

Institute of Oceanographic Sciences, Birkenhead (England).
 International banking of satellite and in-situ wave data by the Marine Information and Advisory Services (MIAS)
 p 69 N85-12434

Inteltek, Inc., Rockville, MD.
 Artificial intelligence costs, benefits, and risks for selected spacecraft ground system automation scenarios
 p 33 N89-21803

Interior Dept., Washington, DC.
 IRM (Information Resources Management) long-range plan: Fiscal year 1984-1988 (update) Volume 2: ADP and telecommunications acquisition plan
 [PB84-229244] p 6 N85-12796

International City Management Association, Washington, DC.
 Design of a scientific information collaboration and dissemination system, volumes 1 thru 3
 [AD-A146002] p 69 N85-12791

International Data Corp., McLean, VA.
 Future information technology, 1984
 Telecommunications
 [PB85-165850] p 22 N85-26173
 Future information technology, 1984
 Telecommunications
 [NBS/SP-500/119] p 22 N85-27762

International Trade Administration, Washington, DC.
 Competitive assessment of the US information services industry
 [PB84-174804] p 7 N85-12803

Iowa Univ., Iowa City.
 A large scale software system for simulation and design optimization of mechanical systems
 p 30 N89-25719

J

Jet Propulsion Lab., California Inst. of Tech., Pasadena.
 Algorithm 607 - Text exchange system. A transportable system for management and exchange of programs and other text
 p 18 A84-44325
 Concepts for a global resources information system
 p 18 A86-20668
 Data access for scientific problem solving
 p 19 A88-20252
 Satellite data management for effective data access
 p 64 A88-38630
 Telescience, an operational approach to science investigation
 [IAF PAPER 88-011] p 2 A89-17630
 Knowledge-based network operations
 p 34 A89-33679
 Network information management subsystem
 p 22 N85-27106
 The evaluation and extension of TAE in the development of a user interface management system
 p 53 N87-23158
 Deep space network resource scheduling approach and application
 p 88 N89-10070
 Concurrent Image Processing Executive (CIPE)
 [NASA-CR-185480] p 31 N89-25619
 Peak power cost reduction guidebook
 [NASA-CR-185020] p 17 N89-71009

K

King Research, Inc., Rockville, MD.
 The use and value of Defense Technical Information Center products and services
 [AD-A130805] p 92 N84-11061
 Measuring the value of information and information systems, services and products
 p 97 N86-28799
 Evaluating the effectiveness of information use
 p 14 N89-11626
 Evaluating the performance of information centre staff
 p 14 N89-11629
 Evaluating performance of information centre operations and services
 p 14 N89-11630
 A framework for evaluating the effectiveness of information centres and services
 p 14 N89-11631

L

Language of Data Project, Sealife, CA.
 Implications of the language of data for computing systems
 p 28 N89-13911

Lantern Livermore, Livermore Lab., CA.
 TIS: An intelligent gateway computer for information and modeling networks. Overview
 [DE83-017986] p 20 N84-14067
 Display units for online passage retrieval. A comparative analysis
 [DE84-001004] p 92 N84-25369
 An online directory of databases for material properties
 [DE84-013210] p 68 N84-33099
 Post-processing of bibliographic citations from DOE/Recon, NASA/Recon, and DOD/DROLS
 [DE85-000617] p 93 N85-20938
 Information information networks for material properties. Revision 1
 [DE85-007412] p 22 N85-27572
 Bibliographic post-processing with the TIS Intelligent Gateway. Analytical and communication capabilities
 [DE85-018153] p 95 N86-18245
 Text compression using word tokenization
 [DE86-000832] p 95 N86-19260
 Integration of communications with the Intelligent Gateway Processor
 [DE87-002386] p 25 N87-19981
 Livermore risk analysis methodology: A quantitative approach to management of the risk associated with the operation of information systems
 [DE87-006828] p 110 N87-24232
 Design and development of a database for spectral data and analysis results
 [DE87-011323] p 74 N88-11558
 Towards automated consulting. Design feedback from the performance of online documentation
 [DE87-012243] p 99 N88-13082
 Interactive access to scientific and technological factual databases worldwide
 [DE88-016172] p 100 N89-14943

A new approach to system testing
 [DE89-006660] p 30 N89-23195
 Problems and solutions in online documentation systems
 [DE89-014092] p 80 N89-28447
 Problems of storing nonlinear documentation
 p 80 N88-70736

Lesley Coll., Cambridge, MA.
 Maintenance Management Information and Control System (MMICS): Administrative boon or burden
 [AD-A145782] p 83 N85-12790

Library of Congress, Washington, DC.
 Emerging issues on managing information resources
 p 17 N85-70762

Lister Hill National Center for Biomedical Communications, Bethesda, MD.
 Videocassette premastering facility: Technical evaluation
 [PB84-135821] p 20 N84-20840

Little (Arthur D.), Inc., Cambridge, MA.
 Future information technology, 1984
 Telecommunications
 [PB85-165850] p 22 N85-26173
 Future information technology, 1984.
 Telecommunications
 [NBS/SP-500/119] p 22 N85-27762

Lockheed Missiles and Space Co., Burbank, CA.
 The TAVERNS emulator: An Ada simulation of the space station data communications network and software development environment
 p 78 N89-16366

Lockheed Missiles and Space Co., Menlo Park, CA.
 A multiprocessing architecture for real-time monitoring
 p 29 N89-15597

Lockheed Missiles and Space Co., Palo Alto, CA.
 The computational structural mechanics testbed architecture. Volume 1: The language
 [NASA-CR-178384] p 76 N89-14472
 Application developer's tutorial for the CSM testbed architecture
 [NASA-CR-181732] p 60 N89-14473
 The computational structural mechanics testbed architecture. Volume 2: The interface
 [NASA-CR-178386] p 76 N89-15435
 The computational structural mechanics testbed architecture. Volume 4: The global-database manager GAL-DBM
 [NASA-CR-178387] p 76 N89-16195
 The computational structural mechanics testbed architecture. Volume 2: Directives
 [NASA-CR-178385] p 78 N89-22133

Logistics Management Inst., Bethesda, MD.
 Improving the defense energy information system (DEIS)
 [AD-A153524] p 84 N85-25649
 Microcomputer-based local automation model: Functional description
 [AD-A160610] p 95 N86-19002
 Microcomputer-based local automation model: System planning guidance
 [AD-A168136] p 98 N87-11630
 Bibliographic networks and microcomputer applications for aerospace and defense scientific and technical information
 p 98 N87-19923
 Capitalizing on experience with intelligence gateway software
 [AD-A193362] p 99 N88-27971

Logistics Management Inst., Washington, DC.
 Local automation model: System specification
 [AD-A141503] p 92 N84-29796

Los Alamos National Lab., NM.
 Logical and physical database design with a full-text environment
 [DE85-015683] p 23 N86-16159
 Monitoring the usage of a computer system
 [DE88-004310] p 111 N88-22542
 United States space policy: Review and assessment
 [DE88-015538] p 115 N89-13306
 Applying expertise to data in the Geologist's Assistant expert system
 [DE89-003483] p 44 N89-20574
 Simulation and analysis of physical mapping
 [DE89-009399] p 56 N89-23198
 Relevance of international research facilities to international stability
 [DE89-009400] p 103 N89-23380

Los Alamos Scientific Lab., NM.
 Modeling the user in intelligent user interfaces
 [DE84-012664] p 50 N84-14795
 INFORM system 2-year plan, FY 1984-1985
 [DE84-016044] p 7 N85-13674
 Intel DIS evaluation
 [DE85-003748] p 83 N85-23451

Louisiana State Univ., Baton Rouge.
 Problem solving as intelligent retrieval from distributed knowledge sources
 p 39 N88-16392

M

- MacAuley-Brown, Inc., Fairborn, OH.**
Automated Information Management Technology (AIM-TECH) Considerations for a technology investment strategy [AD-A161139] p 38 N86-20173
- Management Dimensions Corp., Hanover, MD.**
Protecting sensitive systems and data in an open agency [AIAA PAPER 87-3092] p 107 A88-26213
- Martin Marietta Aerospace, Denver, CO.**
Space station integrated propulsion and fluid systems study [NASA-CR-179393] p 75 N89-12581
- Martin Marietta Aerospace, New Orleans, LA.**
Case based reasoning. The manage of knowledge base and data base p 43 N89-15574
- Martin Marietta Corp., Denver, CO.**
A rapid prototyping/artificial intelligence approach to space station-era information management and access p 46 N89-26600
- Martin Marietta Corp., Huntsville, AL.**
On designing a case-based system for expert process development p 45 N89-24847
- Martin Marietta Labs., Baltimore, MD.**
On designing a case-based system for expert process development p 45 N89-24847
- Martingale Research Corp., Allen, TX.**
BIOMASSCOMP Artificial neural networks and neurocomputers [AD-A200902] p 44 N89-19123
- Maryland Univ., College Park.**
Interconnecting heterogeneous database management systems p 18 A84-41197
Method for accessing distributed heterogeneous databases p 67 N84-21412
Strategies and mechanisms for the diffusion of scientific and technical information. A comparative study p 92 N84-23406
On query processing in distributed database systems p 61 N89-15774
Shared resource control between human and computer p 57 N89-26580
- Massachusetts Inst. of Tech., Cambridge.**
Information theoretic models of memory in human decision-making models p 51 N84-22844
Optimal combination of information from multiple sources, part 3 [AD-A174726] p 59 N87-19913
Satisficing decision-making in supervisory control, part 2 [AD-A174631] p 59 N87-20128
Walter user's manual (Version 1.0) [AD-A192542] p 55 N88-28644
Exploit. g lexical regularities in designing natural language systems p 40 N88-30375
Knowledge-based integrated information systems engineering. Highlights and bibliography. Knowledge-Based Integrated Information Systems Engineering (KBISE) Project, volume 1 [AD-A195150] p 40 N89-30445
Integrating images applications, and communications networks, volume 5 [AD-A195854] p 26 N88-30452
Technical opinions regarding knowledge-based integrated information systems engineering, volume 8 [AD-A195857] p 40 N88-30454
Knowledge-Based Integrated Information Systems Development Methodologies Plan Knowledge-Based Integrated Information Systems Engineering (KBISE) report, volume 2 [AD-A195851] p 41 N88-30455
Strategic, organizational and standardization aspects of integrated information systems, volume 6 [AD-A195855] p 14 N88-30457
Integrating distributed homogeneous and heterogeneous databases Prototypes, volume 3 [AD-A195852] p 27 N89-10668
Object oriented approach to integrating database semantics, volume 4 [AD-A195853] p 41 N89 10672
Statistically sophisticated software and DINDE p 28 N89-11920
Using English for indexing and retrieving [AD-A202227] p 101 N89-20866
Computer-aided fabrication system implementation [AD-A203651] p 88 N89-21576
- Massachusetts Univ., Amherst.**
Plan recognition knowledge acquisition and explanation in an intelligent interface p 42 N85-13191
Resource contention management in parallel systems [AD-A208809] p 32 N89 28332

- McDonnell-Douglas Astronautics Co., Houston, TX.**
Space station Ada runtime support for nested atomic transactions p 77 N89-16375
- McDonnell-Douglas Astronautics Co., Huntington Beach, CA.**
Space Station data system analysis/architecture study Task 1. Functional requirements definition: DR-5 [NASA-CR-177838] p 21 N86-20473
- McDonnell-Douglas Technical Services Co., Inc., Houston, TX.**
Technical and management information system. The tool for professional productivity on the space station program p 84 N86-15171
- Meridian Corp., Falls Church, VA.**
Requirements analysis for forward funding tracking system, volume 1 [AD-A136840] p 81 N84-20425
Requirements analysis for milestone tracking system, volume 2 [AD-A136841] p 81 N84-20426
- Miami Univ., Coral Gables, FL.**
Failible humans and vulnerable systems - Lessons learned from aviation p 50 A88-46511
Interdisciplinary study on artificial intelligence [AD-A131359] p 35 N84-11819
- Missouri Univ., Rolla.**
The database management system. A topic and a tool p 4 N84-22316
- Mitre Corp., Bedford, MA.**
Air Force Geophysics Laboratory management information system study [AD-A161910] p 85 N85-24561
A computer-based specification methodology p 101 N89-16301
Link performance data management and analysis system users manual [AD-A203605] p 88 N89-22356
The trusted function in secure decentralized processing [AD-A155252] p 111 N85-74267
- Mitre Corp., McLean, VA.**
Automated cataloging and characterization of space-derived data p 91 A89-21812
Guidelines for developing NASA (National Aeronautics and Space Administration) ADP security risk management plans [NASA-CR-173564] p 108 N84-26317
Guidelines for development of NASA (National Aeronautics and Space Administration) computer security training programs [NASA-CR-173562] p 108 N84-26318
Guidelines for contingency planning NASA (National Aeronautics and Space Administration) ADP security risk reduction decision studies [PB84-189836] p 108 N84-30737
NASA guidelines for assuring the adequacy and appropriateness of security safeguards in sensitive applications [NASA-CR-175489] p 109 N85-28593
An architecture for integrating distributed and cooperating knowledge-based Air Force decision aids p 44 N89-19841
Guidelines for certification of existing sensitive systems [NASA-CR-174080] p 111 N85-70325
- Motion Analysis Corp., Santa Rosa, CA.**
ExpertVision - A video-based non-contact system for motion measurement p 35 A89-45136

N

- NASA Scientific and Technical Information Facility, Baltimore-Washington International Airport, MD.**
"Meatball searching": The adversarial approach to online information retrieval p 90 A86-40659
Searching the PASCAL database - A user's perspective p 92 A89-45650
- National Academy of Engineering, Washington, DC.**
Information technologies and social transformation [PB85-240521] p 71 N86-19263
- National Academy of Public Administration, Washington, DC.**
Federal information resources management Bldgng vision and action p 15 N89-12488
- National Academy of Sciences - National Research Council, Washington, DC.**
Solar-terrestrial data access distribution and archiving [NASA-CR-173906] p 68 N84-33295
Evaluative report on the Institute for Computer Sciences and Technology. National Bureau of Standards, fiscal year 1984 [PB85-176097] p 8 N85-31848
Navy information systems Planning, policy, organization, and management [PB85-176113] p 8 N85 33038

- Critical issues in NASA information systems [NASA-CR-182380] p 13 N88-16577
Proceedings of the Workshop on AI (Artificial Intelligence), and Distributed Problem Solving [PB88-2-52] p 44 N89-16400
- National Aeronautics and Space Administration, Washington, DC.**
Space Shuttle, private enterprise and intellectual properties in the context of space manufacturing p 112 A84-22341
Idiot sheets - Preparing and using Database guide sheets p 90 A85-24514
Space Shuttle security policies and programs p 104 A85-42594
NASA space information systems overview [AIAA PAPER 87-2189] p 63 A87-48577
Scientific customer needs - NASA user [AIAA PAPER 87-2196] p 49 A87-48582
Technical and Management Information System (TMIS) [AIAA PAPER 87-2217] p 64 A87-48600
Space Station Information System - Concepts and international issues [IAF PAPER 87-76] p 64 A88-15851
A proposed Applications Information System - Concept, implementation, and growth [IAF PAPER 87-156] p 64 A88-15906
Protecting sensitive systems and data in an open agency [AIAA PAPER 87-3092] p 107 A88-26213
Maintaining outer space for peaceful purposes through international cooperation p 2 A89-12104
NASA Administrative Data Base Management Systems, 1983 [NASA-CP-2304] p 81 N84-21403
Action Information Management System (AIMS) A user's view p 82 N84-21405
Automated RTOP management system p 82 N84-21406
The Pilot Land Data System Report of the Program Planning Workshops [NASA-TM-86250] p 67 N84-26468
NASA Administrative Data Base Management Systems, 1984 [NASA-CP-2323] p 82 N84-33266
Effective organizational solutions for implementation of DBMS software packages p 5 N84-33268
Planetary Data Workshop, part 2 [NASA-CP-2343-PT-2] p 69 N84-34376
Database management p 69 N84-34377
Networking p 1 N84-34381
Legal considerations and cooperative opportunities for space commercial activities p 113 N85-11013
Management: A bibliography for NASA managers [NASA-SP-7500(19)] p 83 N85-26439
Management: A bibliography for NASA Managers [NASA-SP-7500(20)] p 85 N86-27108
Prototype material properties data network [NASA-TM-89243] p 24 N86-33208
Management: A bibliography for NASA managers (supplement 21) [NASA-SP-7500(21)] p 85 N87-20833
NASA Information Sciences and Human Factors Program [NASA-TM-87569] p 53 N87-22410
Information processing resources management [NASA-TM-87468] p 17 N85-72768
NASA scientific and technical information system study p 104 N89-70333
The PAD is back p 17 N89-70432
Controlling resources in the Apollo program p 17 N89-70436
The crisis in space and earth science: A time for a new commitment [NASA-TM-101290] p 17 N89-70676
- National Aeronautics and Space Administration, Ames Research Center, Moffett Field, CA.**
Access control and privacy in large distributed systems [AIAA PAPER 86-2781] p 106 A87-18861
Strategies for converting to a DBMS environment p 5 N84-33267
Access control and privacy in large distributed systems [NASA-TM-87397] p 110 N86-29568
Memory and subjective workload assessment p 52 N86-32983
A shared world conceptual model for integrating space station life sciences telepresence operations p 55 N88-30333
Advanced data management design for autonomous telebot systems in space using spaceborne symbolic processors p 41 N89-10096
Development and validation of an advanced low-order panel method [NASA-TM-101024] p 75 N89-12554

The IBM PC at NASA Ames p 16 N89-18392

National Aeronautics and Space Administration.
Goddard Space Flight Center, Greenbelt, MD.
 The pilot climate data system p 63 A86-20669
 The development of an intelligent user interface for NASA's scientific databases p 48 A87-28445
 The Land Analysis System (LAS) - A general purpose system for multispectral image processing p 64 A87-53230
 The hack attack - Increasing computer system awareness of vulnerability threats [AIAA PAPER 87-3093] p 107 A88-26212
 The integrated analysis capability (IAC Level 2.0) p 19 A89-12180
 1988 Goddard Conference on Space Applications of Artificial Intelligence, Greenbelt, MD, May 24, 1988, Proceedings p 33 A89-21801
 Artificial intelligence costs, benefits, and risks for selected spacecraft ground system automation scenarios p 33 A89-21803
 The second generation intelligent user interface for the crustal dynamics data information system p 34 A89-21810
 Automated cataloging and characterization of space-derived data p 91 A89-21812
 The Transportable Applications Environment - An interactive design-to-production development system p 50 A89-29067
 Automated administrative data bases p 82 N84-21411
 NASA-wide standard administrative systems p 82 N84-21415
 Administrative automation in a scientific environment p 82 N84-33269
 A user view of office automation or the integrated workstation p 6 N84-33271
 Guidelines for submitting data to the National Space Science Data Center [NASA-TM-87500] p 23 N86-15209
 Data set management p 24 N86-29285
 Network access to PCDS (SPAN, ESN, SESNET, ARPANET) p 24 N86-29297
 Methods of downloading to user institutions p 24 N86-29298
 Quick-look guide to the crustal dynamics project's data information system [NASA-TM-87818] p 73 N87-23018
 The development of a prototype intelligent user interface subsystem for NASA's scientific database systems [NASA-TM-87821] p 53 N87-24098
 Intel. and data management p 53 N87-29132
 The intelligent user interface for NASA's advanced information management systems p 39 N88-16424
 The second generation intelligent user interface for the crustal dynamics data information system p 40 N88-30352
 Automated cataloging and characterization of space-derived data p 13 N88-30354
 Automation of spacecraft control centers p 86 N89-10078
 IUE archived spectra [NASA-TM-100715] p 101 N89-15829
 The IUE data bank Statistics and future aspects p 115 N89-16609
 Proceedings of the Scientific Data Compression Workshop [NASA-CP-3025] p 78 N89-22332
 Space data management at the NSSDC (National Space Sciences Data Center) Applications for data compression p 102 N89-22334
 The 1989 Goddard Conference on Space Applications of Artificial Intelligence [NASA-CP-3033] p 45 N89-26578
 The utilization of neural nets in populating an object-oriented database p 45 N89-26599
 An intelligent user interface for browsing satellite data catalogs p 79 N89-26601
 Bangladesh Agro-Climatic Environmental Monitoring Project p 79 N89-28121

National Aeronautics and Space Administration. John F. Kennedy Space Center, Cocoa Beach, FL
 Artificial intelligence - New tools for aerospace project managers p 32 A86-34986
 Space Station Program threat and vulnerability analysis [AIAA PAPER 87-3082] p 107 A88-26210
 Intercenter Problem Reporting and Corrective Action System (PRACAS) p 3 N84-21408
 The administrative window into the integrated DBMS p 82 N84-33270
 Office automation The administrative window into the integrated DBMS p 9 N86-15174

National Aeronautics and Space Administration.
 Lyndon B. Johnson Space Center, Houston, TX.
 Space Station Information System integrated communications concept [AIAA PAPER 87-2228] p 18 A87-48606
 Space Station Information System requirements for integrated communications [AIAA PAPER 87-2229] p 18 A87-48607
 Improving management decision processes through centralized communication linkages p 58 N86-15175
 Use of artificial intelligence in supervisory control p 44 N89-20694

National Aeronautics and Space Administration.
 Langley Research Center, Hampton, VA.
 The function of report components in the screening and reading of technical reports p 90 A84-45547
 An advanced media interface for control of modern transport aircraft navigational systems [AIAA PAPER 84-2686] p 46 A85-17885
 Optical Information Processing for Aerospace Applications 2 [NASA-CP-2302] p 67 N84-22402
 Strip and load data p 6 N84-33273
 NASA metrology information system A NEMS subsystem p 88 N84-33279
 A process activity monitor for AOS/VS [NASA-TM-86535] p 109 N86-19950
 The Environment for Application Software Integration and Execution (EASIE), version 1.0 Volume 2 Program integration guide [NASA-TM-100574] p 60 N89-13995
 Cumulative reports and publications through December 31, 1988 [NASA-CR-181784] p 16 N89-20619
 The Environment for Application Software Integration and Execution (EASIE) version 1.0 Volume 1 Executive overview [NASA-TM-100572] p 61 N89-21538

National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH.
 Lewis Information Network (LINK) Background and overview [NASA-TM-100162] p 25 N88-11925
 Laboratory Information Management System (LIMS) A case study [NASA-TM-100835] p 26 N88-21697

National Aeronautics and Space Administration.
 Marshall Space Flight Center, Huntsville, AL.
 Introduction to the Space Physics Analysis Network (SPAN) [NASA-TM-86499] p 22 N85-24198
 Search and retrieval of office files using dBASE 3 [NASA-TM-86550] p 10 N86-30378

National Archives and Records Service, Washington, DC.
 MARC (Machine Readable Catalog) format and life cycle tracking at the National Archives A study [PB87-126256] p 11 N87-21737

National Bureau of Standards, Gaithersburg, MD.
 Security of personal computer systems A management guide [PB85-161040] p 109 N85-24793
 Future information technology, 1984 Telecommunications [NBS/SP-500/119] p 22 N85-27762
 National Archives and Records Service (NARS) twenty year preservation plan [PB85-1776-0] p 84 N85-29854
 Reference model for DBMS (database management system) standardization [PB85-225217] p 9 N86-16923
 Technical overview of the information resource dictionary system [PB85-224491] p 9 N86-18004
 Technology Assessment Methods for measuring the level of computer security [PB86-129954] p 110 N86-25140
 Towards a bibliography information system: The results of a Planning Workshop held at the National Bureau of Standards, July-August 1985 [PB88-168604] p 26 N88-21448
 Standards conformance testing [PB88-215645] p 14 N89-11412
 Computer science and technology Guide to distributed database management [PB88-201561] p 27 N89-11621

National Bureau of Standards, Washington, DC
 Document interchange format [PB84-217033] p 7 N85-16517
 Future information technology, 1984 telecommunications [PB85-165950] p 22 N85-26173
 Materials Information for Science and Technology (MIST) Project overview Phase 1 and 2 and general considerations [DE87-006799] p 73 N87-23312

National Commission on Libraries and Information Science, Washington, DC.
 A decade of accomplishment [ISSN-0091-2972] p 93 N84-33283

National Library of Medicine, Bethesda, MD.
 Notes for medical catalogers, 1983 [PB84-195874] p 6 N84-33296

National Technical Information Service, Springfield, VA.
 Strategic planning process at the National Technical Information Service p 12 N87-26680
 Identifying users and how to reach them p 102 N89-23370

National Telecommunications and Information Administration, Washington, DC.
 Policy implications of information technology [PB84-183219] p 5 N84-31060

Naval Ocean Research and Development Activity, Bay Saint Louis, MS.
 The geonames processing system functional design specification Volume 4 Advanced symbol processing [AD-A161874] p 71 N87-24226

Naval Ocean Systems Center, San Diego, CA.
 Translations of scientific and technical literature A guide to their location p 99 N88-23686
 GRAPS (Graphical Plotting System) user's guide A graphical plotting system for displaying scientific and engineering data [AD-A202583] p 77 N89-21559
 An asynchronous interface between a natural language query interpreter and a database management system [AD-A206918] p 57 N89-26779

Naval Personnel Research and Development Center, San Diego, CA.
 Methods of eliciting information from experts [AD-A187468] p 54 N88-16189

Naval Postgraduate School, Monterey, CA.
 The implementation of a multi-backend database system (MDBS) Part 4 The revised concurrency control and directory management processes and the revised definitions of inter-process and inter-computer messages [AD-A140874] p 21 N84-27453
 Office automation A look beyond word processing [AD-A132764] p 36 N84-28670
 The creation of a central database on a microcomputer network [AD-A143875] p 21 N84-34326
 Data dictionary systems and their role in information resource management [AD-A144905] p 6 N85-10859
 Future database machine architectures [AD-A146786] p 22 N85-16481
 Towards an ideal database server for office automation environments [AD-A148184] p 7 N85-17742
 General design considerations of an Air Force information system [AD-A150611] p 7 N85-23449
 An analysis of data dictionaries and their role in information resource management [AD-A152134] p 7 N85-27121
 Compilation of abstracts of theses submitted by candidates for degrees [AD-A151722] p 83 N85-27739
 Data dictionary design as a stepping-stone to DBMS (Data Base Management System) implementation in the Indonesian Army Data Collecting and Processing Service [AC A152101] p 84 N85-27752
 Design and implementation of an intelligence database [AD-A154095] p 70 N85-30973
 The architectural requirements and integration analysis of a database server for office automation [AD-A155517] p 8 N85-32825
 Design and implementation of a personnel database [AD-A159388] p 70 N86-16917
 A decision support system for cost-effectiveness analysis for control and security of computer systems [AD-A161388] p 58 N86-22134
 Microcomputer-based detachment administrative management system for the LAMPS (Light Airborne Multi-Purpose System) community A requirements analysis [AD A162366] p 85 N86-24552
 Man-machine systems of the 1990 decade Cognitive factors and human interface issues [AD-A163865] p 52 N86-25123
 Modern hardware technologies and software techniques for on-line database storage and access [AD-A164993] p 24 N86-26924
 Federal information systems management Problems, solutions and more problems [AD A171366] p 11 N87-13353



User interface design for two dimensional polygonally encoded geological survey maps
[AD-A170812] p 53 N87-13840

Toward highly portable database systems. Issues and solutions
[AD-A174835] p 11 N87-20131

Optical laser technology, specifically CD-ROM (Compact Disc - Read Only Memory) and its application to the storage and retrieval of information
[AD-A184111] p 74 N88-12086

CD-ROM (Compact Disc Read Only Memory) library of the future
[AD-A187943] p 100 N89-14702

A database approach to computer integrated manufacturing
[AD-A201030] p 16 N89-18088

A program interface prototype for a multimedia database incorporating images
[AD-A206439] p 45 N89-24226

A multimedia database management system supporting contents search in media data
[AD-A207070] p 103 N89-28780

Conversion of mass storage hierarchy in an IBM computer network
[AD-A208520] p 31 N89-28330

An implementation of a data definition facility for the graphics language for database
[AD-A207380] p 89 N89-28442

Information Management in the Department of Defense. The role of libraries
[AD-A130345] p 80 N85-70560

Naval Research Lab., Washington, DC.
Records Disposal. A guidebook for laboratory offices
[AD-A150604] p 9 N85-35823

EDITSPEC: A FORTRAN 77 program for editing and manipulating spectral data from the Vanan CARY 2390 UV-VIS-NIR spectrophotometer
[AD-A200352] p 29 N89-16389

Naval Ship Research and Development Center, Bethesda, MD.
A management workstation concept
[AD-A145617] p 83 N85-11906

Naval Surface Weapons Center, Dahlgren, VA.
SAFEORD: Safety of explosive ordnance databank
[AD-A154058] p 70 N85-30972

Naval Training Equipment Center, Orlando, FL.
Annotated bibliography of human factors laboratory reports (1945-1968) Supplement 4, 1979-1983
[AD-A142141] p 51 N84-29481

Navy Personnel Research and Development Center, San Diego, CA.
Guide to the development of a human factors engineering data retrieval system
[AD-A136918] p 51 N84-20187

Implications of artificial intelligence for a user defined technical information system
[AD-P003938] p 37 N85-11618

Implementation of multifunction information systems at three Navy facilities
[AD-A157797] p 84 N86-16153

Development of a computer-managed readiness assessment system
[AD-A162931] p 71 N86-24215

A systematic approach to human factors measurement
[AD-A132423] p 57 N84-71658

Design considerations for human-computer dialogues
[AD-A159265] p 57 N86-70447

New Mexico Technet, Inc., Albuquerque.
Technology transfer report
[DE89-009044] p 103 N89-23381

Nichols Research Corp., Huntsville, AL.
A data analysis expert system for large established distributed databases
p 33 N89-11718

North Carolina Univ., Chapel Hill.
A hypertext writing environment and its cognitive basis
[AD-A188179] p 54 N88-18298

Information and stochastic systems
[AD-A192167] p 26 N88-24838

Northrop Services, Inc., Research Triangle Park, NC.
REFREEE Bibliographic database manager, documentation
[PB88-200787] p 100 N89-11620

Nuclear Fuel Services, Inc., Erwin, TN.
Computer aided retrieval of vital records
p 80 N88-70735

NYMA, Inc., Greenbelt, MD.
The hack attack - Increasing computer system awareness of vulnerability threats
[AIAA PAPER 87-3093] p 107 N88-26212

Oak Ridge Associated Universities, Inc., TN.
Electronic information management and productivity
[DE85-013362] p 9 N85-35818

Oak Ridge Gaseous Diffusion Plant, TN.
Management information system for engineering
[DE84-001655] p 81 N84-14984

Computer-Output Microfiche (COM) on the Oak Ridge computer network
[DE84-002422] p 92 N84-15836

Using bar code technology to enhance classified document accountability
[DE87-000760] p 96 N87-21739

Using bar code technology to enhance classified document accountability
p 112 N86-70733

Oak Ridge National Lab., TN.
Open systems interconnection for the defence community
p 20 N84-21426

User's guide for an IBM PL/I implementation of the international standard organization DIS 8211 information processing-specification for a data descriptive file for information interchange
[ORNL/CSD-TM-207] p 6 N84-34188

Information Systems development aids
[DE85-018161] p 10 N86-18246

Description of a tentative US-USSR common communication format
[DE86-004678] p 96 N86-25681

Carbon Dioxide Information Center FY 1985
[DE86-004654] p 72 N86-26245

Integrated library system at ORNL LION
[DE86-008867] p 97 N86-31448

Documentation of materials data for computer storage and retrieval
[DE86-009509] p 72 N87-11493

The success or failure of management information systems: A theoretical approach
[DE87-007802] p 85 N87-24233

Implementing and managing change. A guide for assessing information technology
[DE88-000035] p 12 N88-11571

The impact of information technology on research in science and engineering
[DE88-000342] p 13 N88-12417

Air Force geographic information and analysis system
[DE88-001420] p 74 N88-18505

Guidelines for exchanging computerized information
[DE88-004736] p 13 N88-18510

Computer-aided research
[DE88-007771] p 54 N88-26114

Users manual for the Research Notes System (Version 1.5)
[DE89-001391] p 87 N89-15787

ATF (Advanced Toroidal Facility) data management
[DE89-001872] p 77 N89-16486

Life cycle management handbook
[DE89-004315] p 15 N89-17545

Increasing user-friendliness in AI systems
[DE89-005093] p 56 N89-20704

Automated library systems and document tracking systems. Commercial software alternatives, volume 1
[DE89-007716] p 102 N89-21706

An expert system to facilitate selecting a database management system
[DE89-012350] p 45 N89-25774

Approaching distributed database applications using a programmable terminal emulator
[DE89-014831] p 31 N89-28308

Oak Ridge Y-12 Plant, TN.
Efficient office automation and information systems utilization at Martin Marietta Energy System, Incorporated
[DE85-008154] p 8 N85-28633

OAQ Corp., Greenbelt, MD.
PROMIS (Procurement Management Information System)
[NASA-CR-179395] p 87 N89-14933

Office of Management and Budget, Washington, DC.
Five-year plan for meeting the automatic data processing and telecommunications needs of the Federal Government. Volume 1: Planning strategies
[PB84-214501] p 21 N85-12777

Five-year plan for meeting the automatic data processing and telecommunications needs of the Federal Government. Volume 2: Major information technology systems acquisition plans of Federal executive agencies, 1984-1989
[PB84-214519] p 21 N85-12778

Managing federal information resources. Report under the Paperwork Reduction Act of 1980
[PB86-247682] p 10 N86-25299

Managing federal information resources. Report under the Paperwork Reduction Act of 1980
[PB87-114138] p 12 N87-25878

Managing federal information resources. Third annual report under the Paperwork Reduction Act of 1980
[PB84-228641] p 17 N86-71594

Office of Naval Research, Arlington, VA.
Proceedings of the Workshop on AI (Artificial Intelligence), and Distributed Problem Solving
[PB88-224852] p 44 N89-18400

Office of Science and Technology, Washington, DC.
Research and development strategy for high performance computing
[PB89-120778] p 62 N89-70496

Office of Technology Assessment, Washington, DC.
Information technology R and D: Critical trends and issues
[PB85-245680] p 10 N86-19960

Federal government information technology: Management, security and congressional oversight
[PB86-205499] p 110 N87-12397

Space stations and the law: Selected legal issues
[PB87-118220] p 114 N87-21754

Defending secrets, sharing data: New locks and keys for electronic information
[PB88-143185] p 111 N88-20210

Office of the Secretary of Defense, Washington, DC.
Word processors in aerospace/defense information services: Use of distributed information systems by the Office of the Secretary of Defense
p 4 N84-21429

Office of the Under Secretary of Defense for Research and Engineering, Washington, DC.
Information services: Pros and cons
p 97 N86-28797

Centers for analysis of scientific and technical information regulation
[PB86-174315] p 104 N88-72104

Ohio State Univ., Columbus.
Distributed knowledge base systems for diagnosis and information retrieval
[AD-A170630] p 38 N87-15025

Aeronautical decision making. Cockpit resource management
[AD-A205115] p 61 N89-22327

P

Pacific Northwest Lab., Richland, WA.
Executive information system
[DE84-015355] p 83 N85-13675

Assurance Program for Remedial Action (APRA) microcomputer-operated bibliography management system
[DE85-008763] p 95 N86-16155

Technology transfer is opportunity transfer
[DE85-016622] p 114 N86-17230

Experiences with a data analysis management prototype
p 60 N89-13918

Handford meteorological station computer codes Volume 9 The quality assurance computer codes
[DE89-008414] p 78 N89-22295

Pennsylvania State Univ., University Park.
University participation via UNIDATA, part 1
p 72 N86-29295

Advanced techniques for the storage and use of very large, heterogeneous spatial databases. The representation of geographic knowledge. Toward a universal framework
[NASA-CR-181517] p 39 N88-12421

Pennsylvania Univ., Philadelphia.
Preserving the time dimension in information systems
p 37 N85-12784

Pentagon Library, Washington, DC.
Management and the executive
[AD-A190778] p 86 N88-25374

Presearch, Inc., Fairfax, VA.
Analysis of the use of Defense technical information Center resources by research and development centers and laboratories in the US Army
[AD-A168441] p 97 N86-33203

Price Waterhouse and Co., Washington, DC.
Report on US domestic and international telecommunications and information markets
[PB84-166362] p 21 N84-27602

Princeton Univ., NJ.
Investigation of air transportation technology at Princeton University, 1983
p 38 N87-18528

Prospective Computer Analysts, Inc., Arlington, VA.
Automated knowledge base development from CAD/CAE databases
p 43 N89-15585

Purdue Univ., West Lafayette, IN.
VLSI architectures for pattern analysis and image database management
p 20 N84-19183

The retrieval expert model of information retrieval
p 37 N85-25003

Information acquisition for model construction. An integrative, decision-theoretic perspective
p 61 N89-21705

R

- R-K Research and System Design, Malibu, CA.**
Test and Evaluation Master Plan (TEMP) for the Navy Occupational Health Information Management System (NOHIMS). Phase 1: Appendix A through appendix U (AD-A154179) p 84 N85-30967
Annotated bibliography of publications dealing with occupational health and medical information systems, cost analysis procedures, evaluation methodology and related legal issues [AD-A156650] p 94 N85-11078
- RAIA Associates, Santa Clara, CA.**
Microfilm and computer full text of archival documents [AD-A204055] p 103 N89-23377
- RAND Corp., Santa Monica, CA.**
Information systems, security and privacy [RAND/P-6930] p 107 N84-21402
Interactive information environments. A plan for enabling interdisciplinary research [RAND/N-2115] p 6 N84-33284
Telecommunications alternatives for federal users. Market trends and decisionmaking criteria [PB86-153764] p 23 N86-25687
New technologies and intellectual property: An economic analysis [N-2601-NSF] p 114 N88-10695
Implications of the language of data for computing systems p 28 N89-13911
Information transfer in Soviet science and engineering [RAND-R-2667-ARPA] p 80 N84-74361
- Range Commanders' Council, White Sands Missile Range, NM.**
Universal documentation system handbook - an introduction to the universal documentation system [AD-A140140] p 5 N84-25742
- RCA Astro-Electronics Div., Princeton, NJ.**
Information theoretic models of memory in human decisionmaking models [AD-P002683] p 51 N84-22844
- Research Inst. for Advanced Computer Science, Moffett Field, CA.**
Performance issues in management of the Space Station Information System [NASA-CR-185409] p 88 N89-25773
- Research Triangle Inst., Research Triangle Park, NC.**
An advanced media interface for control of modern transport aircraft navigational systems [AIAA PAPER 84-2686] p 46 A85-17865
- Rice Univ., Houston, TX.**
An expert system based intelligent control scheme for space reactors p 44 N89-20285
- Rochester Univ., NY.**
Knowledge retrieval as specialized inference [AD-A189042] p 39 N85-20899
- Rome Air Development Center, Griffis AFB, NY.**
Beyond the data base: Technology for information resource management [AD-A138840] p 4 N84-23402
- Rutgers - The State Univ., New Brunswick, NJ.**
Services for the analysis and evaluation of information [PB84-104504] p 51 N84-18113
Experiments on the cognitive aspects of information seeking and information retrieving [PB87-157699] p 38 N87-24238
Technical report literature in chemistry and engineering. Bibliometric and content analysis p 102 N89-22525

S

- San Jose State Univ., CA.**
The language of data. A general theory of data [AD-A189042] p 39 N85-20899
Intelligent data management p 86 N89-13912
- Sandia National Labs., Albuquerque, NM.**
Algorithm 607 - Text exchange system. A transportable system for management and exchange of programs and other text p 18 A84-44325
Sandia National Laboratories administrative data processing systems [DE84-014328] p 82 N84-34202
Integration of office automation within computing [DE85-010021] p 9 N85-33736
Sandia computerized shock compression bibliographical database [DE85-018542] p 70 N86-17222
State of the art of geoscience libraries and information resources [DE86-011188] p 97 N86-33207
Considerations in developing a comprehensive computer security support database system [DE87-005527] p 110 N87-23151
Elements of a proposed security methodology for networks of computers p 110 N87-23152

- Information network for numeric databases of materials properties [DE87-010512] p 74 N87-28460
A comparison of typical meteorological year solar radiation information with the SOLMET data base [DE88-009242] p 75 N88-29247
The NC (Numerically Controlled) assistant: Interfacing knowledge based manufacturing tools to CAO/CAM systems [DE88-016742] p 42 N89-14709
Developing a connector selection DEMS using NIAM (Niessen's Information Analysis Methodology) [DE89-001658] p 61 N89-15330
Engineering Graphics System (EGS) user's manual [DE89-009668] p 79 N89-25199
Developing a geologic and engineering properties data base with INGRES [DE89-013520] p 79 N89-27593
Management Information Database System [DE89-014595] p 89 N89-27597
- Sci-Tech Knowledge Systems, Scotia, NY.**
Materials Information for Science and Technology (MIST) Project overview Phase 1 and 2 and general considerations [DE87-006799] p 73 N87-23312
- Science Applications International Corp., McLean, VA.**
Space Station Program threat and vulnerability analysis [AIAA PAPER 87-3082] p 107 A88-26210
Risk assessment of compressed natural gas-fueled vehicle operations, phase 1 [PB89-188841] p 104 N89-27196
- Science Applications International Corp., Washington, DC.**
A proposed Applications Information System - Concept, implementation, and growth [IAF PAPER 87-156] p 64 A88-15906
Earth and environmental science in the 1980's. Part 1: Environmental data systems, supercomputer facilities and networks [NASA-CR-4029] p 24 N87-16381
- Science Applications Research, Greenbelt, MD.**
The second generation intelligent user interface for the crustal dynamics data information system p 34 A89-21810
- Search Technology, Inc., Norcross, GA.**
Human factors of intelligent computer aided display design p 47 A87-12216
An architecture for intelligent interfaces - Outline of an approach to supporting operators of complex systems p 48 A87-16818
- Senior Interagency Group on International Communication and Information Policy, Washington, DC.**
White paper on new international satellite systems [PB85-162501] p 8 N85-27127
- Shock and Vibration Information Center (Defense), Washington, DC.**
Editors' table space p 114 N86-10586
- South Dakota Univ., Vermillion.**
Menuing and scrolling as alternative information management techniques [AD-A203729] p 88 N89-22524
- Southern Univ., Baton Rouge, LA.**
USL/DBMS NASA/RECON working paper series Standards [NASA-CR-184508] p 87 N89-14948
Overview of the NASA/RECON educational, research, and development activities of the Computer Science Departments of the University of Southwest Louisiana and Southern University [NASA-CR-184509] p 100 N89-14949
Concepts and implementations of natural language query systems [NASA-CR-184514] p 60 N89-14954
Knowledge based systems: A critical survey of major concepts, issues, and techniques [NASA-CR-184517] p 42 N89-14957
Knowledge based systems: A critical survey of major concepts, issues and techniques: Visuals [NASA-CR-184518] p 43 N89-14958
An innovative, multidisciplinary educational program in interactive information storage and retrieval. Presentation visuals [NASA-CR-184521] p 100 N89-14961
The design of PC/MISI, a PC-based common user interface to remote information storage and retrieval systems [NASA-CR-184523] p 55 N89-14963
The design of PC/MISI, a PC-based common user interface to remote information storage and retrieval systems. Presentation visual [NASA-CR-184524] p 55 N89-14964

- Natural language query system design for interactive information storage and retrieval systems. Presentation visuals [NASA-CR-184525] p 87 N89-14966
KARL: A Knowledge-Assisted Retrieval Language [NASA-CR-184529] p 43 N89-14969
An overview of the USL/DBMS NASA/PC R and D project working paper series [NASA-CR-184533] p 15 N89-14973
General specifications for the development of a USL NASA PC R and D statistical analysis support package [NASA-CR-184537] p 15 N89-14977
General specifications for the development of a USL/DBMS NASA/PC R and D distributed workstation [NASA-CR-184538] p 15 N89-14978
- Southwest Research Inst., San Antonio, TX.**
Sandia computerized shock compression bibliographical database [DE85-018542] p 70 N86-17222
ADRS Automated Data Reduction System [NASA-CR-183438] p 89 N89-71278
- Southwest Texas State Univ., San Marcos.**
Project FIRST (Faculty Information and Research Service for Texas) technical description of project and results [PB84-161629] p 67 N87-1501
- SRI International Corp., Menlo Park, CA.**
Research on interactive acquisition and use of knowledge [AD-A131306] p 35 N84-11823
Research on interactive acquisition and use of knowledge [AD-A137436] p 36 N84-20270
Knowledge representation and natural language semantics [AD-A146025] p 37 N85-12615
An evaluation methodology for dependable multiprocessors [AD-A192799] p 26 N88-26863
Core knowledge system. Storage and retrieval of inconsistent information p 45 N89-23132
- Stanford Linear Accelerator Center, CA.**
Integrated database approach for geodetic applications [DE88-012726] p 75 N89-11615
- Stanford Univ., CA.**
The advantages of abstract control knowledge in expert system design [AD-A139978] p 36 N84-25370
The user's mental model of an information retrieval system. Effects on performance p 51 N84-32275
Data Base Management. Proceedings of a conference [AD-A158285] p 85 N86-25999
Databases for statistics p 72 N86-26000
A visual object-oriented unification system [AD-A206228] p 30 N89-24068
- State Univ. of New York, Buffalo.**
SNePS considered as a fully intensional propositional semantic network p 27 N89-13184
- Strategic Air Command, Offutt AFB, NE.**
Air Force geographic information and analysis system [DE88-001420] p 74 N88-18505
- Swedish Inst. of Computer Science, Uppsala.**
Practical issues relating to the internal database predicates in an OR-parallel prolog. Extensions and useful hacks [DE88-010019] p 27 N89-13174
- Syracuse Univ., NY.**
Computer architectures for very large knowledge bases p 41 N89-12294
Knowledge base maintenance using logic programming methodologies p 42 N89-12295
An experimental investigation into software reliability [AD-A206293] p 30 N89-24069
- System Development Corp., McLean, VA.**
Guideline for computer security certification and accreditation. Category ADP (Automatic Data Processing) operations. Subcategory: Computer security. Federal information processing standards [FIPS-PUB-102] p 108 N84-30736
Technology assessment. Methods for measuring the level of computer security [PB86-129954] p 110 N86-25140
- Systems Control Technology, Inc., Arlington, VA.**
Aeronautical decision making. Cockpit resource management [AD-A205115] p 61 N89-22327
- Sytek, Inc., Mountain View, CA.**
Security concepts for microprocessor based key generator controllers [AD-A155194] p 111 N85-74089

T

- Tel-Aviv Univ. (Israel).**
Intelligent data management p 86 N89-13913
- Tennessee Univ., Chattanooga.**
SIRE: A Simple Interactive Rule Editor for NICBES p 78 N89-21730
- Tennessee Univ., Knoxville.**
Automated library systems and document tracking systems. Commercial software alternatives, volume 1 [DE89-007716] p 102 N89-21706
- Texas A&M Univ., College Station.**
Organization as information processing systems. Toward a model of the research factors associated with significant research outcomes [AD-A168018] p 10 N86-33200
Organizations as information processing systems. Environmental characteristics, company performance and chief executive scanning, an empirical study [AD-A168035] p 10 N86-33201
- Texas Univ., Austin.**
Knowledge-based network operations p 34 A89-33679
A comparative study of OCLC, Inc. and the Washington Library Network in twenty-nine Pacific Northwest academic libraries p 109 N86-15208
A study of organizational information search, acquisition, storage and retrieval [AD-A172063] p 98 N87-16650
Decision-oriented strategic planning for information systems. Applying conceptual models of crisis decision-making to strategic planning for crisis management decision support systems p 15 N89-12486
- Titan Systems, Inc., McLean, VA.**
Future information technology, 1984 telecommunications [PB85-165850] p 22 N85-26173
Future information technology, 1984 telecommunications [NBS/SP-500/119] p 22 N85-27762
- Towson State Univ., MD.**
Logical optimization for database uniformization [NASA-CR-173836] p 5 N84-32282
- Transportation Systems Center, Cambridge, MA.**
Computer resource management technology program (PE 64740F) Task no. 9. Advanced user authentication [PB88-183066] p 111 N88-25163
- TRW Defense Systems Group, Fairfax, VA.**
Advanced computing systems. An advanced reasoning-based development paradigm for Ada trusted systems and its application to MACH [AD-A206308] p 45 N89-24070

U

- Ultracom, Inc., Del Mar, CA.**
Development of a proposed standard for the exchange of scientific microcomputer programs [PB84-157940] p 4 N84-24244
- Unisys Corp., Paoli, PA.**
Integrating syntax, semantics, and discourse DARPA (Defense Advanced Research Projects Agency) natural language understanding program [AD-A203747] p 101 N89-20677
- University Corp. for Atmospheric Research, Boulder, CO.**
University participation via UNIDATA, part 2 p 72 N86-29296
- University of Southern California, Marina del Rey.**
Inquiry semantics. A functional semantics of natural language grammar [AD-A135153] p 36 N84-17929
- University of Southwestern Louisiana, Lafayette.**
USL/DBMS NASA/RECON working paper series Standards [NASA-CR-184508] p 87 N89-14948
Overview of the NASA/RECON educational, research, and development activities of the Computer Science Departments of the University of Southwestern Louisiana and Southern University [NASA-CR-184509] p 100 N89-14949
Concepts and implementations of natural language query systems [NASA-CR-184514] p 60 N89-14954
Knowledge based systems. A critical survey of major concepts, issues, and techniques [NASA-CR-184517] p 42 N89-14957
Knowledge based systems. A critical survey of major concepts, issues and techniques. Visuals [NASA-CR-184518] p 43 N89-14958
An innovative, multidisciplinary educational program in interactive information storage and retrieval. Presentation visuals [NASA-CR-184521] p 100 N89-14961

- The design of PC/MISI, a PC-based common user interface to remote information storage and retrieval systems [NASA-CR-184523] p 55 N89-14963
The design of PC/MISI, a PC-based common user interface to remote information storage and retrieval systems. Presentation visuals [NASA-CR-184524] p 55 N89-14964
Natural language query system design for interactive information storage and retrieval systems. Presentation visuals [NASA-CR-184526] p 87 N89-14966
KARL: A Knowledge-Assisted Retrieval Language [NASA-CR-184529] p 43 N89-14969
An overview of the USL/DBMS NASA/PC R and D project working paper series [NASA-CR-184533] p 15 N89-14973
General specifications for the development of a USL NASA PC R and D statistical analysis support package [NASA-CR-184537] p 15 N89-14977
General specifications for the development of a USL/DBMS NASA/PC R and D distributed workstation [NASA-CR-184538] p 15 N89-14978

V

- Veda, Inc., Lexington Park, MD.**
Generic Ada code in the NASA space station command control and communications environment p 29 N89-16341
- Virginia Polytechnic Inst. and State Univ., Blacksburg.**
Research and development of models and instruments to define, measure, and improve shared information processing within government oversight agencies [DE87-012473] p 12 N87-29371
- Virginia Univ., Charlottesville.**
Implementation of a hypercube database system [DE89-010474] p 88 N89-26413

W

- Washington Univ., Seattle.**
Scientific and technical information system for the Washington State Legislature [PB84-100650] p 66 N84-18112
A data viewer for multivariate data p 28 N89-13921
Allocation strategies for APL on the CHIP (configurable highly parallel) computer [AD-A203761] p 32 N89-70704
- Winzen International Inc., San Antonio, TX.**
Sandia computerized shock compression bibliographical database [DE85-018542] p 70 N86-17222
- Wisconsin Univ., Milwaukee.**
Technology transfer primer [PB86-205341] p 73 N87-12404
- Woods Hole Oceanographic Inst., MA.**
A systems approach to the design of the Eos data and information system p 64 A87-53207
- World Climate Programme, Geneva (Switzerland)**
Guidelines on the structure, management, and operation of climate data centers [WCP-99] p 72 N86-32938
- World Wildlife Fund, Inc., Washington, DC.**
Corporate use of information regarding natural resources and environmental quality [PB84-222736] p 69 N85-12794

Y

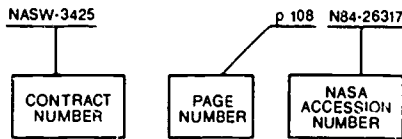
- Yale Univ., New Haven, CT.**
Memory based expert systems [AD-A145612] p 37 N85-11628

CONTRACT NUMBER INDEX

INFORMATION RESOURCES MANAGEMENT 1984-1989 / A Bibliography with Indexes

MAY 1990

Typical Contract Number Index Listing



Listings in this index are arranged alphanumerically by contract number. Under each contract number, the accession numbers denoting documents that have been produced as a result of research done under the contract are arranged in ascending order with the AIAA accession numbers appearing first. The accession number denotes the number by which the citation is identified in the abstract section. Preceding the accession number is the page number on which the citation may be found.

AF AFOSR-0106-87
AF PROJ 2304

p 26 N86-24838
p 35 N84-11821
p 28 N89-13901

AF PROJ 4594
AF PROJ 6670
AF PROJ 8336
AF AFOSR-0029-80
AF AFOSR-0070-86
AF AFOSR-0255-82
AF AFOSR-80-0229
AF AFOSR-82-0322
ARPA ORDER 3338
ARPA ORDER 3396
ARPA ORDER 3520
ARPA ORDER 4871
ARPA ORDER 5156
ARPA ORDER 5262
ARPA ORDER 6414
AT(29-1)-789
B-10-695-51
DA PROJ B-10-695-SI
DA PROJ 201-61102-B-74-F
DA PROJ 4A1-61102-AT-24
DAAA15-86-C-0064
DAAD05-84-C-0189
DAAG29-82-K-0198
DAMD17-86-C-6093
DE-AC01-85DP-20133
DE AC02-76CH-00016

p 4 N84-23402
p 75 N89-10500
p 17 N89-71009
p 51 N84-22844
p 28 N89-13901
p 38 N87-15025
p 57 A84-21644
p 19 A89-12181
p 111 N85-74267
p 111 N84-73042
p 80 N84-74361
p 76 N89-13305
p 10 N86-27110
p 101 N89-20677
p 45 N89-24070
p 18 A84-44325
p 31 N89-26776
p 31 N89-26777
p 98 N87-16650
p 94 N86-12995
p 54 N88-20825
p 97 N86-33203
p 35 N84-11819
p 41 N89-11435
p 27 N89-10674
p 8 N85-30760
p 25 N87-18282
p 73 N87-18465
p 74 N87-30211
p 28 N89-14068

DE-AC03-76SF 00098

p 25 N87-24116
p 60 N89-11408
p 80 N89-70023
p 80 N89-70024
p 75 N89-11615

DE-AC03-76SF 00515

p 95 N86-17219
p 71 N86-24572

DE-AC04-76DP-00613

p 82 N84-29802
p 82 N84-34202
p 9 N85-33736
p 70 N86-17222
p 97 N86-33207
p 24 N86-33208
p 110 N87-23151
p 110 N87-23152
p 74 N87-28460
p 75 N88-29247
p 42 N89-14709

DE AC04-76DP-00656

p 82 N84-34202
p 9 N85-33736
p 70 N86-17222
p 97 N86-33207
p 24 N86-33208
p 110 N87-23151
p 110 N87-23152
p 74 N87-28460
p 75 N88-29247
p 42 N89-14709

DE AC04-76DP-00789

p 82 N84-34202
p 9 N85-33736
p 70 N86-17222
p 97 N86-33207
p 24 N86-33208
p 110 N87-23151
p 110 N87-23152
p 74 N87-28460
p 75 N88-29247
p 42 N89-14709

DE-AC05-76OR-00033
DE-AC05-84CS-21400
DE-AC05-84OR-21400

DE-AC05-84OT-21400

DE-AC06-76FF-02170
DE-AC06-76RL-01380
DE-AC06-76RL-01830

DE-AC07-76ID-01570

DE-AC09-76SR-00001
DE-FC22-83FE-60149
DE-FG04-84AL-26034
DE-FG05-86DP-70033
DE-FG05-88ER-25063
DLAH00-83-D-0225
DT-FA01-83-Y-10554
DTFA01-80-C-10080
DTFA01-83-Y-30629
DTRS57-85-C-00083

EMW-C-0877
EPA-68-01-6639-236
EPA-68-01-7325
EPA-68-02-4063
EPA-68-02-4198
F19628-79-C-0001
F19628-84-C-0001
F19628-85-C-0003

F19628-86-C-0001

F19628-86-D-0003
F30602-81-C-0169
F30602-81-C-0193
F30602-81-C-0206
F30602-82-C-0093
F30602-85-C-0005
F30602-85-C-0008

F30602-86-C-0003
F33615-82-C-0509
F33615-82-C-0513
F33615-84-C-3216

F33615-87-C-1491
F41689-82-C-0068
F49620-79-C-0181
F49620-82-K-0009
F49620-82-K-0010
F49620-82-K-0017
F49620-82-K-0031
F57-526

p 61 N89-15330
p 79 N89-23199
p 79 N89-27593
p 89 N89-27597
p 9 N85-35818
p 8 N85-28633
p 10 N86-18246
p 96 N86-25681
p 72 N86-26245
p 97 N86-31448
p 72 N87-11493
p 85 N87-24233
p 12 N88-11571
p 13 N88-12417
p 74 N88-18505
p 13 N88-18510
p 54 N88-26114
p 87 N89-15787
p 77 N89-16486
p 15 N89-17545
p 56 N89-20704
p 45 N89-25774
p 112 N88-70733
p 98 N87-21739
p 102 N89-21706
p 31 N89-28308
p 108 N84-31989
p 95 N86-16155
p 83 N85-13675
p 114 N86-17230
p 78 N89-22295
p 104 A85-42595
p 86 N89-14177
p 101 N89-20028
p 17 N89-27350
p 12 N88-12415
p 76 N89-16018
p 103 N89-23381
p 12 N87-29371
p 88 N89-26413
p 8 N85-28879
p 52 N85-19647
p 61 N89-22327
p 69 N85-28942
p 40 N88-30449
p 26 N88-30452
p 40 N88-30454
p 41 N88-30455
p 14 N88-30457
p 27 N89-10668
p 41 N89-10672
p 69 N85-12791
p 94 N85-35828
p 89 N89-27261
p 73 N87-19845
p 100 N89-11620
p 111 N85-74267
p 85 N86-24561
p 27 N89-13154
p 87 N89-19903
p 44 N89-19841
p 88 N89-22356
p 26 N88-26863
p 32 N89-28332
p 30 N89-24069
p 48 A87-33044
p 106 A87-18857
p 39 N88-20052
p 91 A87-34522
p 27 N89-13184
p 106 A87-18855
p 48 A87-16818
p 38 N86-20173
p 50 A89-12179
p 99 N88-22823
p 44 N89-19123
p 68 N84-33060
p 36 N84-17929
p 35 N84-11821
p 37 N85-11628
p 38 N86-30573
p 37 N85-12615
p 51 N84-20187

GRI-5087-254-1621
GRI-5088-450-1667
MDA903-77-C-0211
MDA903-81-C-0166
MDA903-83-C-0342
MDA903-83-C-0440
MDA903-84-K-0031
MDA903-85-C-0139

MDA903-86-C-0345
MDA904-82-C-0449
MDA972-89-C-0029
NAGW-1121
NAGW-1191
NAGW-455
NAGW-946
NAGW-987
NAG1-613
NAG5-267
NAG5-763
NAG5-798
NAGW-3165
NASW-3367

NASW-3425

NASW-3622
NASW-3685
NASW-3846

NASW-4070
NASW-4092
NASW-4124
NASW-4234
NAS1-14101

NAS1-17874

NAS1-18107
NAS1-18444

NAS1-18605

NAS2-12048
NAS5-24300
NAS5-27351
NAS5-27378
NAS5-28082
NAS5-28283
NAS5-29298
NAS7-918

NAS8-35928
NAS8-36438
NAS9-16023

NCC2-202
NCC2-377
NCC2-387

p 104 N89-27196
p 89 N89-27590
p 111 N84-73042
p 92 N84-29798
p 84 N85-29849
p 81 N84-20425
p 81 N84-20426
p 98 N87-16650
p 10 N86-27110
p 95 N86-19002
p 98 N87-11630
p 99 N88-27971
p 54 N88-18298
p 111 N85-74089
p 45 N89-24070
p 66 N89-31941
p 66 N89-31941
p 72 N86-32863
p 64 A87-53207
p 66 N89-31941
p 35 A89-41158
p 61 N89-20717
p 5 N84-32282
p 87 N89-14946
p 39 N88-12421
p 89 N89-28440
p 90 A84-45571
p 90 A85-24514
p 90 A85-24549
p 90 A86-40659
p 108 N84-26317
p 108 N84-26318
p 108 N84-30737
p 109 N85-28593
p 111 N85-70325
p 24 N87-16381
p 3 N84-18304
p 87 N89-14946
p 100 N89-14949
p 60 N89-14954
p 42 N89-14957
p 43 N89-14958
p 100 N89-14961
p 55 N89-14963
p 55 N89-14964
p 87 N89-14966
p 43 N89-14969
p 15 N89-14973
p 15 N89-14977
p 15 N89-14978
p 92 A89-45650
p 24 N87-16381
p 13 N88-16577
p 3 A89-27210
p 32 N89-71335
p 90 N89-71336
p 47 A87-12216
p 48 A87-16818
p 16 N89-20619
p 76 N89-14472
p 60 N89-14473
p 76 N89-15435
p 76 N89-16195
p 78 N89-22133
p 16 N89-20619
p 30 N89-24058
p 48 A87-16818
p 89 N89-71121
p 105 A85-42600
p 18 A84-41197
p 23 N86-20473
p 89 N89-71278
p 3 A89-27210
p 71 N86-22130
p 31 N89-25619
p 87 N89-14933
p 75 N89-12581
p 12 N88-12412
p 47 A86-26011
p 50 A88-46511
p 106 A87-18861
p 110 N86-29568
p 88 N89-25573

CONTRACT

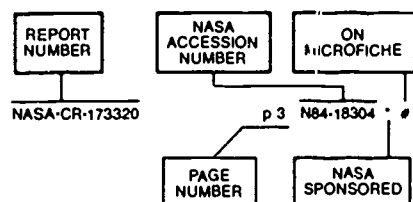
NGR-09-010-078	p 32	N89-71335	p 25	N87-20772
	p 90	N89-71336	p 27	N89-13174
NGT-09-010-800	p 48	A87-16716	p 28	N89-14700
NGT-19-010-900	p 87	N89-14948	p 78	N89-22374
	p 100	N89-14949	p 81	N84-14984
	p 60	N89-14954	p 92	N84-15836
	p 42	N89-14957	p 6	N84-34188
	p 43	N89-14958	p 50	N84-14795
	p 100	N89-14961	p 7	N85-13674
	p 55	N89-14963	p 83	N85-23451
	p 55	N89-14964	p 23	N86-16159
	p 87	N89-14966	p 111	N86-22542
	p 43	N89-14969	p 115	N89-13306
	p 15	N89-14973	p 44	N89-20574
	p 15	N89-14977	p 56	N89-23198
	p 15	N89-14978	p 103	N89-23380
NO1-LM-23510	p 93	N85-12798	p 20	N84-14067
NR PROJ. 042-267	p 85	N86-25999	p 92	N84-25369
NR PROJECT SRO-101	p 90	A84-44092	p 68	N84-33099
NSF BNS-03711	p 52	N86-18985	p 83	N85-20938
NSF DCR-84-18878	p 32	N89-70704	p 27	N85-27572
NSF DMS-84-12233	p 60	N89-13919	p 95	N86-18245
NSF ECS-81-18135	p 57	A85-31792	p 95	N86-19260
NSF ECS-84-05480	p 20	A89-39600	p 25	N87-19981
NSF INT-79-24187	p 104	N84-74126	p 110	N87-24232
	p 80	N84-75267	p 74	N88-11564
NSF ISI-85-80151	p 32	N89-71248	p 99	N88-13062
NSF ISP-79-16510	p 67	N84-24501	p 100	N89-14943
NSF ISP-80-19579	p 66	N84-18112	p 30	N89-23195
NSF IST-79-11180	p 93	N85-22260	p 80	N89-28447
NSF IST-81-08519	p 57	A85-31792	p 75	N89-12554
NSF IST-81-11497	p 93	N85-22260	p 76	N89-14472
NSF IST-84-07880	p 32	A87-16706	p 60	N89-14473
NSF IST-84-15297	p 114	N88-10895	p 76	N89-15435
NSF IST-84-20814	p 28	N89-13920	p 76	N89-16195
NSF IST-87-05411	p 38	N87-24238	p 78	N89-22133
NSF MCS-81-21896	p 105	A87-18653	p 26	N86-21697
NSF MCS-82-05166	p 36	N84-11824	p 16	N89-20819
NSF MIP-87-10868	p 20	A89-39600	p 30	N89-24058
NSF PRA-84-00689	p 23	N86-25687	p 32	N89-71335
NSF DCR-84-11665	p 39	N88-20899	p 90	N89-71336
NSF-87016628	p 51	N84-18113	p 80	N89-13995
N00014-76-C-0476	p 85	N86-25999	p 61	N89-21538
N00014-79-C-0302	p 36	N84-25370	p 67	N84-22402
N00014-79-C-0323	p 36	N84-31050	p 78	N89-22332
N00014-79-C-0861	p 35	N84-11756	p 31	N89-25619
	p 36	N84-11824		
N00014-80-C-0160	p 8	N85-32038		
N00014-80-C-0197	p 39	N88-20899		
N00014-80-C-0542	p 57	A84-33463		
N00014-81-K-0143	p 90	A84-44092		
N00014-82-C-5076	p 35	N84-11756		
N00014-82-K-0335	p 30	N89-24068		
N00014-83-C-0025	p 10	N86-33200		
	p 10	N86-33201		
N00014-83-C-0485	p 59	N88-20820		
N00014-83-C-0525	p 3	N84-18169		
N00014-83-D-0889	p 71	N86-24227		
N00014-83-K-0021	p 50	N84-15790		
N00014-83-K-0125	p 55	N88-28644		
N00014-83-K-0193	p 59	N87-19913		
	p 59	N87-20128		
N00014-83-K-0577	p 20	A89-39600		
N00014-83-K-0742	p 5	N84-29437		
N00014-84-C-0484	p 58	N86-25992		
N00014-84-C-0801	p 84	N85-30967		
	p 84	N86-11078		
N00014-84-K-0063	p 52	N86-18965		
N00014-85-C-0012	p 101	N89-20677		
N00014-85-C-0653	p 103	N89-23377		
N00014-85-K-0076	p 52	N86-21143		
N00014-85-K-0124	p 40	N88-30375		
	p 101	N89-20866		
N00014-85-K-0143	p 30	N89-22369		
N00014-85-K-0213	p 88	N89-21576		
N00014-85-K-0243	p 58	A88-35463		
N00014-85-K-0584	p 54	N88-26805		
N00014-86-K-0054	p 26	N88-15729		
N00014-86-K-0264	p 32	N89-70704		
N00014-86-K-0565	p 30	N89-24068		
N00014-87-K-0384	p 30	N89-24068		
N00014-87-K-0827	p 61	N89-20717		
N00039-80-C-0575	p 35	N84-11823		
	p 36	N84-20270		
N00039-84-C-0089	p 76	N89-13305		
N86001-85-C-0253	p 88	N89-22524		
PROJ. F66-701	p 59	N88-20820		
PROJ. RR0-1406	p 8	N85-32825		
RR0-1403	p 7	N85-17742		
RR0-4206	p 52	N86-18985		
	p 54	N88-26805		
SAIC PROJ. 1-224-03-340-28	p 24	N87-16381		
SRI PROJ. 1894	p 36	N84-20270		
SUNY-BRDF-150-9216	p 27	N89-13184		
SWRI PROJ. 06-8347-001	p 89	N89-71278		
W-31-109-ENG-38	p 7	N85-15434		
W-7405-ENG-26	p 81	N84-14984		
W-7405-ENG-36	p 92	N84-15836		
	p 6	N84-34188		
	p 50	N84-14795		
	p 7	N85-13674		
	p 83	N85-23451		
	p 23	N86-16159		
	p 111	N86-22542		
	p 115	N89-13306		
	p 44	N89-20574		
	p 56	N89-23198		
	p 103	N89-23380		
W-7405-ENG-48	p 20	N84-14067		
	p 92	N84-25369		
	p 68	N84-33099		
	p 83	N85-20938		
	p 27	N85-27572		
	p 95	N86-18245		
	p 95	N86-19260		
	p 25	N87-19981		
	p 110	N87-24232		
	p 74	N88-11564		
	p 99	N88-13062		
	p 100	N89-14943		
	p 30	N89-23195		
	p 80	N89-28447		
505-61-71	p 75	N89-12554		
505-63-01-10	p 76	N89-14472		
	p 60	N89-14473		
	p 76	N89-15435		
	p 76	N89-16195		
	p 78	N89-22133		
505-63-01	p 26	N86-21697		
505-90-21-01	p 16	N89-20819		
	p 30	N89-24058		
	p 32	N89-71335		
	p 90	N89-71336		
506-49-31-01	p 80	N89-13995		
	p 61	N89-21538		
506-54-13-20	p 67	N84-22402		
584-02-11	p 78	N89-22332		
889-20-41 17-62	p 31	N89-25619		

REPORT NUMBER INDEX

INFORMATION RESOURCES MANAGEMENT 1984-1989 / A Bibliography with Indexes

MAY 1990

Typical Report Number Index Listing



Listings in this index are arranged alphanumerically by report number. The page number indicates the page on which the citation is located. The accession number denotes the number by which the citation is identified. An asterisk (*) indicates that the item is a NASA report. A pound sign (#) indicates that the item is available on microfiche.

A-88275	p 75	N89-12554	#	AD-A146002	p 69	N85-12791	#	AD-A188906	p 39	N88-20052	#
AAS PAPER 86-111	p 2	A87-53087		AD-A146025	p 37	N85-12615	#	AD-A189042	p 39	N88-20699	#
AAS PAPER 88-004	p 33	A89-20833		AD-A146786	p 22	N85-16481	#	AD-A189390	p 54	N88-20825	#
ACSC-84-1345	p 21	N84-34318	#	AD-A146184	p 7	N85-17742	#	AD-A189750	p 99	N88-22822	#
ACSC-84-2605	p 6	N84-33288	#	AD-A148881	p 52	N85-19647	#	AD-A189778	p 99	N88-22823	#
ACSC-84-2785	p 21	N84-33063	#	AD-A149102	p 52	N85-19649	#	AD-A189971	p 13	N88-23680	#
ACSC-86-1465	p 54	N80-26837	#	AD-A150811	p 7	N85-23449	#	AD-A190778	p 86	N88-25374	#
AD-A130345	p 80	N85-70560	#	AD-A151722	p 83	N85-27739	#	AD-A191296	p 28	N89-13901	#
AD-A130797	p 92	N84-11059	#	AD-A151899	p 22	N85-26170	#	AD-A192167	p 26	N88-24636	#
AD-A130805	p 92	N84-11061	#	AD-A152101	p 84	N85-27752	#	AD-A192516	p 54	N88-26837	#
AD-A131015	p 50	N84-15790	#	AD-A152134	p 7	N85-27121	#	AD-A192542	p 55	N88-26844	#
AD-A131306	p 35	N84-11823	#	AD-A153031	p 8	N85-28870	#	AD-A192729	p 54	N88-26805	#
AD-A131359	p 35	N84-11819	#	AD-A153524	p 84	N85-29649	#	AD-A193362	p 26	N88-26863	#
AD-A131382	p 35	N84-11821	#	AD-A153810	p 69	N85-26942	#	AD-A195850	p 99	N88-27971	#
AD-A131423	p 35	N84-11756	#	AD-A154058	p 70	N85-30972	#	AD-A195851	p 40	N88-30449	#
AD-A131424	p 36	N84-11824	#	AD-A154095	p 70	N85-30973	#	AD-A195852	p 41	N88-30455	#
AD-A132423	p 57	N84-71658	#	AD-A154179	p 84	N85-30987	#	AD-A195853	p 27	N89-10668	#
AD-A132764	p 36	N84-28670	#	AD-A155050	p 8	N85-33043	#	AD-A195854	p 41	N89-10672	#
AD-A133001	p 104	N84-75065	#	AD-A155194	p 111	N85-74089	#	AD-A195855	p 26	N88-30452	#
AD-A133480	p 66	N84-16078	#	AD-A155252	p 111	N85-74267	#	AD-A195856	p 14	N88-30457	#
AD-A134835	p 111	N84-73042	#	AD-A155517	p 8	N85-32625	#	AD-A195857	p 40	N88-30454	#
AD-A135153	p 36	N84-17929	#	AD-A156084	p 9	N85-35823	#	AD-A195922	p 40	N88-30375	#
AD-A135565	p 66	N84-19174	#	AD-A156650	p 94	N86-11078	#	AD-A196314	p 75	N89-10500	#
AD-A135916	p 20	N84-14067	#	AD-A157700	p 95	N86-15211	#	AD-A196414	p 14	N89-11403	#
AD-A136275	p 3	N84-19169	#	AD-A157797	p 84	N86-16153	#	AD-A197053	p 41	N89-11435	#
AD-A136640	p 81	N84-20425	#	AD-A157911	p 84	N86-13227	#	AD-A197137	p 27	N89-13154	#
AD-A136841	p 51	N84-20426	#	AD-A157936	p 84	N86-12995	#	AD-A197179	p 75	N89-12558	#
AD-A136918	p 36	N84-20187	#	AD-A158285	p 85	N86-25999	#	AD-A197369	p 76	N89-13305	#
AD-A137436	p 36	N84-20270	#	AD-A158001	p 38	N86-15213	#	AD-A197943	p 100	N89-14702	#
AD-A137808	p 81	N84-21104	#	AD-A159265	p 57	N86-70447	#	AD-A198951	p 28	N89-14178	#
AD-A138071	p 51	N84-22254	#	AD-A159388	p 70	N86-16917	#	AD-A200352	p 29	N89-16389	#
AD-A138840	p 4	N84-23402	#	AD-A160610	p 95	N86-18917	#	AD-A200902	p 44	N89-19123	#
AD-A139970	p 36	N84-25370	#	AD-A160783	p 52	N86-18985	#	AD-A201030	p 16	N89-18088	#
AD-A140140	p 5	N84-25742	#	AD-A161002	p 71	N86-22130	#	AD-A201345	p 87	N89-19903	#
AD-A140874	p 21	N84-27453	#	AD-A161139	p 38	N86-20173	#	AD-A202227	p 101	N89-20666	#
AD-A141304	p 108	N84-28498	#	AD-A161362	p 52	N86-21143	#	AD-A202583	p 77	N89-21559	#
AD-A141503	p 92	N84-29798	#	AD-A161388	p 58	N86-22134	#	AD-A202628	p 16	N89-22354	#
AD-A141712	p 5	N84-29437	#	AD-A161700	p 95	N86-21431	#	AD-A202644	p 16	N89-21711	#
AD-A142141	p 51	N84-29481	#	AD-A161701	p 96	N86-21432	#	AD-A203029	p 88	N89-22524	#
AD-A142712	p 36	N84-31050	#	AD-A161874	p 71	N86-24226	#	AD-A203605	p 88	N89-22356	#
AD-A143226	p 68	N84-33060	#	AD-A161890	p 71	N86-24227	#	AD-A203651	p 88	N89-21576	#
AD-A143398	p 6	N84-33288	#	AD-A161910	p 85	N86-24561	#	AD-A203674	p 102	N89-20669	#
AD-A143438	p 58	N84-33290	#	AD-A161998	p 110	N86-24582	#	AD-A203747	p 101	N89-20677	#
AD-A143446	p 21	N84-33063	#	AD-A162366	p 85	N86-24552	#	AD-A203761	p 32	N89-70704	#
AD-A143875	p 21	N84-34326	#	AD-A162931	p 71	N86-24215	#	AD-A204055	p 103	N89-23377	#
AD-A143900	p 6	N84-34327	#	AD-A163150	p 58	N86-24215	#	AD-A204421	p 16	N89-22528	#
AD-A144006	p 21	N84-34316	#	AD-A163865	p 52	N86-25992	#	AD-A204652	p 30	N89-22369	#
AD-A144905	p 6	N85-10859	#	AD-A163951	p 96	N86-26026	#	AD-A204764	p 62	N89-22532	#
AD-A145193	p 107	N84-21402	#	AD-A164037	p 23	N86-25133	#	AD-A205115	p 61	N89-22327	#
AD-A145812	p 37	N85-11628	#	AD-A164503	p 10	N86-27110	#	AD-A206047	p 79	N89-24066	#
AD-A145617	p 83	N85-11906	#	AD-A164993	p 24	N86-26924	#	AD-A206228	p 20	N89-24068	#
AD-A145762	p 83	N85-12790	#	AD-A165640	p 96	N86-28779	#	AD-A206293	p 30	N89-24069	#
				AD-A166200	p 97	N86-30570	#	AD-A206308	p 45	N89-24070	#
				AD-A166365	p 38	N86-30573	#	AD-A206439	p 45	N89-24226	#
				AD-A166420	p 59	N86-29722	#	AD-A206581	p 31	N89-26776	#
				AD-A168018	p 10	N86-33200	#	AD-A206582	p 31	N89-26777	#
				AD-A168035	p 10	N86-33201	#	AD-A206918	p 57	N89-26779	#
				AD-A168136	p 98	N87-11630	#	AD-A207070	p 103	N89-26780	#
				AD-A168441	p 97	N86-33203	#	AD-A207380	p 89	N89-28442	#
				AD-A168589	p 10	N86-33204	#	AD-A208520	p 31	N89-28330	#
				AD-A168917	p 73	N87-12388	#	AD-A208809	p 32	N89-28332	#
				AD-A169259	p 72	N87-11492	#				
				AD-A170612	p 53	N87-13840	#	AD-E301677	p 9	N85-35823	#
				AD-A170830	p 38	N87-15025	#	AD-E301788	p 57	N86-70447	#
				AD-A171366	p 11	N87-13353	#	AD-E500637	p 21	N84-21453	#
				AD-A171525	p 11	N87-15902	#	AD-E500978	p 40	N88-30449	#
				AD-A172063	p 98	N87-16650	#	AD-E500978	p 26	N88-30452	#
				AD-A174000	p 53	N87-16657	#	AD-E500978	p 40	N88-30454	#
				AD-A-74154	p 25	N87-16658	#	AD-E500978	p 41	N88-30455	#
				AD-A174631	p 59	N87-20128	#	AD-E500978	p 14	N88-30457	#
				AD-A174635	p 11	N87-20131	#	AD-E500978	p 27	N89-10668	#
				AD-A174726	p 59	N87-19913	#	AD-E500978	p 41	N89-10672	#
				AD-A181101	p 111	N87-27550	#	AD-E751074	p 21	N84-34316	#
				AD-A181102	p 98	N87-27551	#	AD-E900298	p 91	N84-21104	#
				AD-A184002	p 98	N88-12420	#	AD-E900710	p 26	N88-15729	#
				AD-A184111	p 74	N88-12086	#	AD-E900870	p 16	N89-21711	#
				AD-A185950	p 39	N88-15725	#	AD-E900870	p 16	N89-22354	#
				AD-A186150	p 99	N88-16574	#				
				AD-A186414	p 26	N88-15729	#	AD-F000114	p 39	N88-15725	#
				AD-A186680	p 39	N88-17337	#	AD-F250645	p 11	N87-13353	#
				AD-A187468	p 54	N88-18189	#	AD-F630038	p 57	N84-71658	#
				AD-A188179	p 54	N88-18298	#				
				AD-A188726	p 59	N88-20820	#	AD-POC2748	p 67	N84-23295	#

REPORT

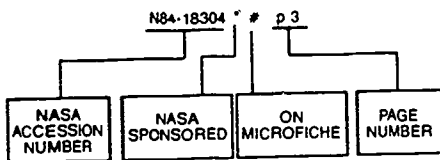
AD-P002750	p 4	N84-23297	ARI-RN-86-06	p 96	N87-18650	CONF-880304-12	p 44	N84-20674
AD-P002751	p 67	N84-23298	ARINC-3087-01-01-4437	p 27	N89-10674	CONF-880306-1	p 103	N88-23380
AD-P002863	p 51	N84-22844	ARO-20126 1-AA	p 35	N84-11819	CONF-8804184-3	p 78	N88-27583
AD-P003310	p 68	N84-28451	ASIAC-887 1A	p 99	N86-27823	CONF-8804210-7	p 80	N88-28447
AD-P003313	p 51	N84-28452	ASOBC-C-89-020	p 31	N89-26776	CONF-8808113-2	p 45	N88-25774
AL P003936	p 37	N85-11816	ASOBC-C-89-021	p 31	N89-26777	CRREL-SR-85-4	p 94	N86-12885
AD-P003946	p 37	N85-11826	ATR-2	p 37	N85-12615	CPS-TK-7885-F	p 114	N86-27130
AFAMRL-TR-85-042	p 38	N86-20173	B-226577	p 11	N87-22551	CSC-STD-001-83	p 108	N84-28496
AFESC/ESL-TR-84-14	p 68	N84-33080	BDN-6508	p 39	N86-20052	CSC/TM-82/6033	p 89	N89-71121
AFGL-ERP-997	p 75	N89-10500	BDX-813-3272	p 95	N86-17219	CSDL-AIPS-84-138	p 12	N86-12412
AFGL-TR-88-0036	p 75	N89-10500	BDX-813-3386	p 71	N86-24572	CJ-CS-153-7822	p 26	N86-15729
AFIT-LSSR-86-83	p 58	N84-33290	BNL-NCS-35791	p 8	N85-30780	DAITC/TR-88/008	p 102	N89-20888
AFIT/CI/NR-86-12D	p 59	N86-29722	BNL-38433	p 73	N87-18465	DBMS NASA/PC-R/D-1	p 15	N89-14873
AFIT/CI/NR-88-61	p 28	N89-14176	BNL-38433	p 25	N87-18282	DBMS NASA/PC-R/D-5	p 15	N89-14877
AFIT/CI/NR-88-76	p 14	N89-11403	BNL-39065	p 74	N87-30211	DBMS NASA/PC-R/D-6	p 15	N89-14878
AFIT/GCS/EE/83D-22	p 51	N84-22254	BNL-41438	p 28	N89-14088	DBMS NASA/RECON-10	p 43	N89-14856
AFIT/GCS/ENG/84D-21	p 22	N85-26170	B8212184	p 109	N84-32302	DBMS NASA/RECON-13	p 100	N89-14861
AFIT/GCS/ENG/88D-4	p 79	N89-24066	CARE-83-3	p 50	N84-15780	DBMS NASA/RECON-15	p 55	N89-14863
AFIT/GE/ENG/85D-31	p 96	N86-26026	CERL-TR-N-163	p 66	N84-18078	DBMS NASA/RECON-16	p 55	N89-14864
AFIT/GE/ENG/85D-36	p 23	N86-25133	CLASSIC-89-23	p 30	N89-24088	DBMS NASA/RECON-18	p 87	N89-14886
AFIT/GIR/LSQ/88D-8	p 62	N89-22532	CMU-CS-83-110	p 35	N84-11756	DBMS NASA/RECON-1	p 100	N89-14896
AFIT/GIR/LSY/88D-5	p 16	N89-22528	CMU-CS-83-135-PT-1	p 36	N84-11824	DBMS NASA/RECON-21	p 43	N89-14898
AFIT/GLM/LSM/88S-2	p 16	N89-22354	CMU-RI-TR-86-3	p 38	N86-30573	DBMS NASA/RECON-2	p 80	N89-14854
AFOSR-83-0658TR	p 35	N84-11821	CMU/SEI-88-TR-3	p 87	N89-19903	DEB-TR-86-03	p 17	N89-71009
AFOSR-84-0799TR	p 37	N85-12615	CMU/SEI-88-TR-9	p 27	N89-13154	DE83-017896	p 20	N84-14087
AFOSR-84-0814TR	p 37	N85-11828	CNSS-3	p 115	N89-13396	DE84-001004	p 82	N84-25388
AFOSR-86-0509TR	p 38	N87-15025	CONF-8310131-2	p 81	N84-14984	DE84-001865	p 3	N87-14884
AFOSR-86-0051TR	p 26	N86-24838	CONF-8310260-1	p 82	N84-29802	DE84-002422	p 82	N84-15636
AFOSR-86-0153TR	p 28	N89-13901	CONF-831202-2	p 50	N84-14795	DE84-008021	p 82	N84-29802
AFWAL-TR-87-1123	p 39	N88-17337	CONF-840580-1	p 62	N84-25369	DE84-011478	p 108	N84-31889
AFWAL-TR-88-1076	p 44	N89-19123	CONF-8406118-1	p 108	N84-31989	DE84-012994	p 108	N84-31889
AGES-840312	p 7	N85-13673	CONF-8406139-9-REV-1	p 68	N84-33089	DE84-013000	p 108	N84-31889
AI-M-1041	p 40	N88-30375	CONF-8411114-2	p 22	N85-25752	DE84-013000	p 108	N84-31889
AI-M-1096	p 101	N89-20366	CONF-841243-REV-1	p 83	N85-23451	DE84-015355	p 82	N84-34202
AIAA PAPER 84-2686	p 46	A85-17865	CONF-8502095-1	p 93	N85-20938	DE84-016044	p 83	N85-13675
AIAA PAPER 86-2759	p 105	A87-18853	CONF-8503118-1	p 23	N86-18159	DE84-016285	p 7	N85-13674
AIAA PAPER 86-2780	p 107	A87-18865	CONF-8504129-1	p 8	N85-28633	DE84-001453	p 69	N85-13677
AIAA PAPER 86-2781	p 105	A87-18854	CONF-850610-13	p 9	N85-33736	DE85-000817	p 83	N85-20808
AIAA PAPER 86-2771	p 106	A87-18855	CONF-8506175-1	p 8	N85-30780	DE85-003748	p 83	N85-23451
AIAA PAPER 86-2772	p 106	A87-18856	CONF-8507111-1	p 114	N86-17220	DE85-005953	p 8	N87-30780
AIAA PAPER 86-2773	p 106	A87-18857	CONF-850770-10	p 26	N86-17222	DE85-007412	p 22	N85-27572
AIAA PAPER 86-2774	p 106	A87-18863	CONF-8510207-2	p 70	N86-17222	DE85-008154	p 8	N85-27572
AIAA PAPER 86-2775	p 106	A87-18858	CONF-8608122-1	p 71	N86-24572	DE85-008763	p 8	N85-27572
AIAA PAPER 86-2776	p 107	A87-18864	CONF-860722-11	p 97	N86-33207	DE85-010021	p 8	N85-27572
AIAA PAPER 86-2779	p 112	A87-18859	CONF-860722-7	p 72	N87-11493	DE85-013362	p 95	N85-27572
AIAA PAPER 86-2780	p 106	A87-18860	CONF-860762-1	p 24	N86-33208	DE85-015983	p 9	N85-33758
AIAA PAPER 86-2781	p 106	A87-18861	CONF-8608110-2	p 25	N87-18282	DE85-016822	p 23	N85-35818
AIAA PAPER 87-1681	p 1	A87-31113	CONF-8610138	p 73	N87-18465	DE85-018153	p 114	N86-17220
AIAA PAPER 87-2189	p 63	A87-48577	CONF-8610203-2	p 25	N87-19981	DE85-018311	p 83	N85-13675
AIAA PAPER 87-2196	p 49	A87-48582	CONF-8610255-1	p 25	N87-24116	DE85-018542	p 10	N86-18248
AIAA PAPER 87-2205	p 64	A87-48590	CONF-8611001-1	p 42	N89-14709	DE85-018542	p 95	N86-17218
AIAA PAPER 87-2217	p 2	A87-48600	CONF-8611101-1	p 110	N87-24232	DE85-018542	p 70	N86-17222
AIAA PAPER 87-2228	p 18	A87-48606	CONF-8611101-1	p 99	N86-13062	DE85-018542	p 95	N86-19280
AIAA PAPER 87-2229	p 16	A87-48607	CONF-8611101-1	p 99	N86-13062	DE85-018542	p 71	N86-24572
AIAA PAPER 87-3082	p 107	A88-26210	CONF-8611101-1	p 96	N87-21739	DE85-018542	p 72	N86-26245
AIAA PAPER 87-3082	p 107	A88-26213	CONF-8611101-1	p 104	N88-70731	DE85-018542	p 96	N86-25881
AIAA PAPER 87-3093	p 107	A88-26212	CONF-8611101-1	p 74	N88-11564	DE85-018542	p 24	N86-33208
AIAA PAPER 88-0749	p 107	A88-22566	CONF-8704121-2	p 74	N87-30211	DE85-018542	p 97	N86-33208
AIAA PAPER 88-3990	p 3	A89-18148	CONF-8705147-1	p 13	N88-18510	DE85-018542	p 11	N86-33208
AIAA PAPER 88-4410	p 19	A88-51934	CONF-870565-1	p 110	N87-23151	DE85-018542	p 97	N86-33207
AIJA PAPER 89-0190	p 34	A89-25185	CONF-8706131-1	p 12	N88-12415	DE85-018542	p 107	N87-18282
AIAA PAPER 89-0779	p 65	A89-28460	CONF-8710132-4	p 74	N88-12415	DE85-018542	p 107	N87-18465
AIAA PAPER 89-0849	p 91	A89-25618	CONF-8710147-1	p 13	N88-12417	DE85-018542	p 25	N87-20772
AIAA PAPER 89-0850	p 91	A89-25619	CONF-8710173-1	p 74	N88-18505	DE85-018542	p 98	N87-21739
AIAA PAPER 89-0851	p 91	A89-25620	CONF-8710173-1	p 77	N89-16086	DE85-018542	p 25	N87-19881
AIAA PAPER 89-2086	p 66	A89-49447	CONF-880364-36	p 111	N86-22542	DE85-018542	p 110	N87-23152
AIAA PAPER 89-2096	p 50	A89-49456	CONF-880456-1	p 60	N89-11408	DE85-018542	p 73	N87-23312
AIAA PAPER 89-5051	p 20	A89-48162	CONF-8806166-1	p 75	N89-11815	DE85-018542	p 110	N87-24232
ANL/MCS-TM-125	p 28	N89-14700	CONF-8806166-2	p 28	N89-14088	DE85-018542	p 85	N87-24233
ANL/TM-379-REV	p 7	N85-15434	CONF-880695-44	p 17	N89-27350	DE85-018542	p 25	N87-24118
ANL/TM-438-REV	p 25	N87-20772	CONF-8808208-1	p 101	N89-20028	DE85-018542	p 74	N87-20480
AR-10	p 93	N84-33283	CONF-8808208-2	p 27	N89-13174	DE85-018542	p 74	N87-30211
AR-3	p 7	N86-71594	CONF-880859-1	p 30	N89-23195	DE85-018542	p 74	N89-11544
AR-4	p 10	N86-25299	CONF-880894-4	p 86	N89-14177	DE85-018542	p 99	N86-12082
ARI-RN-85-71	p 71	N86-22130	CONF-8809112-1	p 78	N89-22374	DE85-018542	p 12	N86-12415
			CONF-8810262-2	p 100	N89-14943	DE85-018542	p 12	N86-12415
			CONF-881030-2	p 56	N89-20774	DE85-018542	p 104	N86-70731
			CONF-881249-3	p 56	N89-23130	DE85-018542	p 13	N86-12417
			CONF-881276-1			DE85-018542	p 78	N86-18018
						DE85-018542	p 74	N86-18505
						DE85-018542	p 111	N86-22542
						DE85-018542	p 13	N86-18510

DE88-007771	p 54	N88-26114	#	DTNSRDC/CMLD-84-17	p 83	N85-11906	#	JPL-FUBL-88-32	p 31	N89-25619	#
DE88-009242	p 75	N88-29247	#								
DE88-010019	p 27	N89-13174	#	E-3724	p 25	N88-11925	#	K/CSD-INF-83-20	p 92	N84-15836	#
DE88-012024	p 60	N89-11408	#	E-4024	p 26	N88-21697	#	K/CSD-INF-86/19P	p 98	N87-21739	#
DE88-012726	p 75	N89-11615	#								
DE88-013990	p 28	N89-14068	#								
DE88-015184	p 86	N89-14177	#	EGG-M-20887	p 17	N89-27350	#	K/D-544	p 81	N84-14984	#
DE88-015538	p 115	N89-13306	#	EGG-M-88216	p 86	N89-14177	#				
DE88-015996	p 27	N89-10674	#	EGG-M-88377	p 101	N89-20028	#	K/DSRD-55-VOL-1	p 102	N89-21706	#
DE88-016172	p 100	N89-14943	#					K/DSRD-80	p 31	N89-28308	#
DE88-016652	p 80	N89-70024	#	EPA-600/D-85-085	p 94	N85-35828	#				
DE88-016653	p 80	N89-70023	#	EPA-600/3-86-053	p 73	N87-19845	#	L-15754	p 67	N84-22402	#
DE88-016742	p 42	N89-14709	#								
DE88-017264	p 28	N89-14700	#	EPA/IMSD-85/003	p 12	N87-28458	#	LA-UR-83-1392	p 50	N84-14795	#
DE89-001391	p 87	N89-15787	#					LA-UR-84-3537	p 83	N85-23451	#
DE89-001658	p 61	N89-15330	#	EPA/SW/DK-88/047A	p 100	N89-11620	#	LA-UR-85-2329	p 23	N86-16159	#
DE89-001872	p 77	N89-16486	#	EPA/SW/DK-89/019A	p 89	N89-27261	#	LA-UR-87-4103	p 111	N88-22542	#
DE89-003463	p 44	N89-20574	#					LA-UR-88-3750	p 44	N89-20574	#
DE89-004315	p 15	N89-17545	#	EPA/600/3-88/043	p 78	N89-22188	#	LA-UR-89-813	p 103	N89-23380	#
DE89-005093	p 56	N89-20704	#	EPA/600/4-88/033A	p 89	N89-27261	#	LA-UR-89-817	p 56	N89-23198	#
DE89-005191	p 101	N89-20028	#	EPA/600/8-87/052A	p 100	N89-11620	#				
DE89-007501	p 78	N89-22374	#					LA-10185-MS	p 7	N85-13674	#
DE89-007716	p 102	N89-21706	#	ESD-TR-85-114	p 85	N86-24561	#	LA-11181	p 115	N89-13306	#
DE89-007784	p 16	N89-22527	#	ESD-TR-88-004	p 87	N89-19903	#				
DE89-008414	p 78	N89-22295	#	ESD-TR-88-010	p 27	N89-13154	#	LBL-PUB-3043	p 80	N89-70023	#
DE89-008660	p 30	N89-23195	#	ESD-TR-88-283	p 88	N89-22356	#	LBL-PUB-3057	p 80	N89-70024	#
DE89-009044	p 103	N89-23381	#								
DE89-009399	p 56	N89-23198	#	ETN-86-97250	p 72	N86-32938	#	LBL-22460	p 25	N87-24116	#
DE89-009400	p 103	N89-23380	#					LBL-24767	p 60	N89-11408	#
DE89-009668	p 79	N89-23199	#	FAA-APO-84-18	p 52	N85-19647	#				
DE89-009726	p 17	N89-27350	#	FAA-APO-85-5	p 69	N85-28942	#	LC-84-601149	p 22	N85-26173	#
DE89-010474	p 88	N89-26413	#					LC-84-601149	p 22	N85-27762	#
DE89-012350	p 45	N89-25774	#	FHWA/TS-84/226	p 73	N87-12404	#	LC-84-601150	p 10	N86-19960	#
DE89-013520	p 79	N89-27593	#					LC-84-601156	p 109	N85-24793	#
DE89-014092	p 80	N89-28447	#	FIPS-PUB-102	p 108	N84-30736	#	LC 5 4830	p 71	N86-19263	#
DE89-014595	p 89	N89-27597	#					LC-85-600600	p 110	N86-25140	#
DE89-014331	p 31	N89-28308	#	FR-4	p 52	N85-19647	#	LC-86-600507	p 110	N87-12397	#
								LC-86-600569	p 114	N87-21754	#
								LC-87-619902	p 26	N88-21448	#
DOD-3200 12-F-2	p 104	N86-72104	#	FTD-ID(RS)T-1527-83	p 66	N84-19174	#				
DOD-7750 5-M	p 12	N87-24227	#								
DOE/AL-26034/T6	p 103	N89-23381	#	GAO/GGD-86-68	p 10	N86-33204	#	LHNCBC/TR 83-10	p 20	N84-20840	#
DOE DP-20133/T1	p 27	N89-10674	#	GAO/IMTEC-87-20	p 11	N87-22551	#	LMI-DL401	p 92	N84-29798	#
DOE/DP-70033/1	p 12	N87-29371	#	GAO/IMTEC-88-28	p 101	N89-20859	#	LMI-DL503	p 95	N86-19002	#
				GAO/RCED-84-129	p 109	N84-32302	#	LMI DL503	p 98	N87-11630	#
DOE/ER-0367	p 29	N89-20645	#					LMI DL604R1	p 99	N88-27971	#
DOE/ER-25063/1	p 88	N89-26413	#	GEPP-OP-754A	p 82	N84-29802	#	LMI-ML405	p 84	N85-29849	#
DOE/MA-0048-4	p 11	N86-33206	#	GPO-20-580	p 3	N84-11989	#	LMSC/D878511-VOL 1	p 76	N89-14472	#
DOE/MA-0351	p 16	N89-22527	#	GPO-27-827	p 4	N84-25528	#	LMSC/D878511-VOL-2	p 76	N89-15435	#
				GPO-28-416	p 4	N84-24504	#	LMSC/D878511-VOL-4	p 76	N89-16195	#
DOE/OR-21400/T257	p 97	N86-31448	#	GPO-29-457	p 69	N84-34319	#	LMSC/D878511	p 60	N89-14473	#
				GPO-30-544	p 109	N85-19691	#	LMSC/D878511	p 78	N89-22133	#
DOT-SRP-84-6	p 17	N85-74028	#	GPO-39-741	p 109	N85-21994	#				
				GPO-49-539	p 114	N86-21458	#	MCR 87-580	p 75	N89-12581	#
DOT-TSC-RSPA-88-1	p 111	N88-25163	#	GPO-52-154	p 109	N86-15919	#				
				GPO-82-156	p 114	N85-12496	#	MDC-H1343A REV	p 23	N86-20473	#
DOT-VA846-88-1	p 111	N88-25163	#								
DOT/FAA/CT-TN88/8	p 75	N89-12558	#	GRI-88/0249	p 89	N89-27590	#	MIT-KBIIE-1	p 40	N88-30449	#
				GRI-89/0037	p 104	N89-27196	#	MIT-KBIIE-2	p 41	N88-30455	#
DOT/FAA/PM-86/46	p 61	N89-22327	#					MIT-KBIIE-3	p 27	N89-10668	#
				H-REPT-98-147	p 3	N84-11989	#	MIT-KBIIE-4	p 41	N89-10672	#
DP-MS-87-103	p 12	N88-12415	#	H-REPT-98-15	p 4	N84-25528	#	MIT-KBIIE-5	p 26	N88-30452	#
								MIT-KBIIE-6	p 14	N88-30457	#
DSCI-87-18	p 59	N88-20820	#	HEDL-SA-3128-FP	p 108	N84-31989	#	MIT-KBIIE-8	p 40	N88-30454	#
DTIC-AI-FOUNDATION-SER-4	p 39	N88-15725	#	HIG-83-3	p 69	N85-13677	#	MIT/LCS/TR-399	p 55	N88-28644	#
DTIC-AI-FOUNDATION-SER-5	p 99	N88-16574	#	HPP 83-17	p 36	N84-25370	#	MRC-WPAFB-88-001	p 44	N89-19123	#
DTIC-AI-FOUNDATIONAL-SER-2	p 111	N87-27550	#								
DTIC-TR 86/13	p 98	N87-11630	#	IAF PAPER 86-303	p 1	A87-16003	#	MTR-10450	p 88	N89-22356	#
DTIC-TR-88/7	p 99	N88-27971	#	IAF PAPER 87-156	p 64	A88-15906	#	MTR-3892	p 111	N85-74267	#
				IAF PAPER 87-550	p 49	A88-16167	#	MTR-82W18	p 111	N95-70325	#
				IAF PAPER 87-76	p 64	A88-15851	#	MTR-83W123	p 108	N84-26317	#
				IAF PAPER 88-011	p 2	A89-17630	#	MTR-83W203	p 108	N84-30737	#
DTIC/TR-83/5	p 104	N84-75065	#	IAF PAPER 88-C39	p 80	A88-55330	#	MTR-83W68	p 108	N84-26318	#
DTIC/TR-84/3	p 6	N84-34327	#	IAF PAPER 88-622	p 113	A89-17871	#	MTR-84W-00179	p 109	N85-28593	#
DTIC/TR 85/11	p 38	N86-15213	#					MTR-9338	p 85	N86-24561	#
DTIC/TR-85/16	p 96	N86-21432	#	ICASE-76-2	p 32	N89-71335	#				
DTIC/TR-85/17	p 95	N86-21431	#	ICASE-76-6	p 90	N89-71336	#	N-2601-NSF	p 114	N88-10695	#
DTIC/TR-85/4	p 9	N85-33043	#	ICASE-89-20	p 30	N89-24058	#				
DTIC/TR-85/8	p 95	N86-15211	#					NARA/TIP 86/02	p 11	N87-21737	#
DTIC/TR 86/15	p 72	N87-11492	#	ICS-8406	p 36	N84-31050	#				
DTIC/TR-86/19	p 11	N87-15902	#					NAS 1 15 100162	p 25	N88-11925	#
DTIC/TR-86/5	p 53	N87-16657	#	ISBN-0-339-03529-5	p 71	N86-19263	#	NAS 1 15 100573	p 61	N89-21538	#
DTIC/TR-86/6	p 97	N86-30570	#	ISBN-0-8330-0361-3	p 80	N84-74361	#	NAS 1 15 100574	p 60	N89-13995	#
DTIC/TR-86/8	p 25	N87-16658	#	ISBN-0-8330-0692-4	p 23	N86-25687	#	NAS 1 15 100715	p 101	N89-15829	#
								NAS 1 15 100835	p 26	N88-21697	#
DTIC/TR-87/17-REV	p 98	N88-12420	#					NAS 1 15 101024	p 75	N89-12554	#
DTIC/TR 87/19	p 39	N88-15725	#	ISI/RS-82 8	p 36	N84-17929	#	NAS 1 15 101290	p 17	N89-70676	#
DTIC/TR 87/23	p 99	N88-16574	#					NAS 1 15 102020	p 17	N89-71009	#
DTIC/TR-87/7	p 98	N87-27551	#	ISSN-0091-2972	p 93	N84-33283	#	NAS 1 15 86250	p 67	N84-26468	#
DTIC/TR-87/9	p 111	N87-27550	#	IWR-86-UM-1	p 73	N87-12388	#	NAS 1 15 86499	p 22	N85-24198	#
DTIC/TR 88/5	p 99	N88-22822	#					NAS 1 15 86535	p 109	N86-19950	#
DTIC/TR 89/4	p 102	N89-20869	#	JPL PUB 85-91	p 17	N89-71009	#	NAS 1 15 86550	p 10	N86-30378	#

NAS 1.15:87468	p 17	N85-72768 *	NASA-CR-184514	p 80	N89-14954 *	NSF/INT-81003	p 104	N84-74126 #
NAS 1.15:87500	p 23	N86-15209 *	NASA-CR-184517	p 42	N89-14957 *	NSF/ISI-86029	p 32	N89-71248
NAS 1.15:87599	p 53	N87-22410 *	NASA-CR-184518	p 43	N89-14958 *	NSF/ISP-83016	p 66	N84-18112 #
NAS 1.15:87818	p 73	N87-23018 *	NASA-CR-184521	p 100	N89-14961 *	NSF/ISP-83025	p 67	N84-24501 #
NAS 1.15:87821	p 53	N87-24098 *	NASA-CR-184523	p 55	N89-14963 *	NSF/PRA-85023	p 23	N86-25687 #
NAS 1.15:88243	p 24	N86-33206 *	NASA-CR-184524	p 55	N89-14964 *	NSSDC/WDC-A-RS-84-19	p 23	N86-15209 *
NAS 1.15:89397	p 110	N86-29568 *	NASA-CR-184526	p 87	N89-14966 *	NSWC/MP-83-183	p 70	N85-30972 #
NAS 1.21:7500(19)	p 83	N85-26439 *	NASA-CR-184529	p 43	N89-14968 *	NTIA-84-144	p 5	N84-31080 #
NAS 1.21:7500(20)	p 85	N86-27108 *	NASA-CR-184533	p 15	N89-14973 *	ONR-84-1	p 5	N84-29437 #
NAS 1.21:7500(21)	p 85	N87-20833 *	NASA-CR-184537	p 15	N89-14977 *	ONR-8405	p 36	N84-31050 #
NAS 1.26:173320	p 3	N84-18304 *	NASA-CR-184538	p 15	N89-14978 *	ONR-88-1	p 54	N88-26805 #
NAS 1.26:173562	p 106	N84-26318 *	NASA-CR-184615	p 87	N89-14946 *	ORAU/IEA-85-3(M)	p 9	N85-35818 #
NAS 1.26:173564	p 108	N84-26317 *	NASA-CR-184674	p 61	N89-20717 *	ORNL/CDIC-11	p 72	N86-26245 #
NAS 1.26:173636	p 5	N84-32282 *	NASA-CR-185020	p 17	N89-71009 *	ORNL/CSD-TM-207	p 6	N84-34188 #
NAS 1.26:173908	p 68	N84-33295 *	NASA-CR-185409	p 68	N89-25773 *	ORNL/CSD/TM-232	p 96	N86-25681 #
NAS 1.26:174080	p 111	N85-70325 *	NASA-CR-185480	p 31	N89-25619 *	ORNL/DSRD-13	p 15	N89-17545 #
NAS 1.26:175489	p 109	N85-28593 *	NASA-CR-185729	p 90	N89-71336 *	ORNL/DSRD/TM-11	p 54	N88-26114 #
NAS 1.26:17643	p 71	N86-22130 *	NASA-CR-185730	p 32	N89-71335 *	ORNL/DSRD/TM-18	p 87	N89-15787 #
NAS 1.26:177838	p 23	N86-20473 *	NASA-CR-4029	p 24	N87-16381 *	ORNL/TM-10320	p 85	N87-24233 #
NAS 1.26:178384	p 76	N89-14472 *	NASA-SP-7500(19)	p 83	N85-26439 *	ORNL/TM-10520	p 12	N86-11571 #
NAS 1.26:178385	p 78	N89-22133 *	NASA-SP-7500(20)	p 85	N86-27108 *	ORNL/TM-9647	p 10	N86-18246 #
NAS 1.26:178386	p 78	N89-15435 *	NASA-SP-7500(21)	p 85	N87-20833 *	OTA-BP-ISC-41	p 114	N87-21754 #
NAS 1.26:178387	p 76	N89-16195 *	NASA-TM-100162	p 25	N88-11925 *	OTA-CIT-268	p 10	N86-19980 #
NAS 1.26:179393	p 75	N89-12581 *	NASA-TM-100573	p 61	N89-21536 *	OTA-CIT-297	p 110	N87-12397 #
NAS 1.26:179395	p 87	N89-14933 *	NASA-TM-100574	p 60	N89-13995 *	OTA-CIT-310	p 111	N88-20210 #
NAS 1.26:179789	p 72	N86-32863 *	NASA-TM-100715	p 101	N89-15829 *	PB83-183771	p 82	N84-11059 #
NAS 1.26:181481	p 12	N88-12412 *	NASA-TM-100635	p 26	N89-21697 *	PB84-100650	p 66	N84-18112 #
NAS 1.26:181517	p 39	N88-12421 *	NASA-TM-101024	p 75	N89-12554 *	PB84-104504	p 51	N84-18113 #
NAS 1.26:181732	p 80	N89-14473 *	NASA-TM-101290	p 17	N89-70676 *	PB84-135821	p 20	N84-20840 #
NAS 1.26:181784	p 16	N89-20619 *	NASA-TM-862570	p 67	N84-26468 *	PB84-157940	p 4	N84-24244 #
NAS 1.26:181825	p 30	N86-24058 *	NASA-TM-86499	p 22	N85-24198 *	PB84-161629	p 67	N84-24501 #
NAS 1.26:182380	p 13	N88-16577 *	NASA-TM-86535	p 109	N86-19950 *	PB84-161777	p 104	N84-74126 #
NAS 1.26:183249	p 89	N89-28440 *	NASA-TM-86550	p 17	N86-30378 *	PB84-166362	p 21	N84-27802 #
NAS 1.26:183438	p 69	N89-71278 *	NASA-TM-87468	p 23	N85-72768 *	PB84-171321	p 108	N84-26317 #
NAS 1.26:183455	p 89	N89-71121 *	NASA-TM-87509	p 53	N87-22410 *	PB84-171339	p 108	N84-26318 #
NAS 1.26:184508	p 87	N89-14948 *	NASA-TM-87818	p 53	N87-24098 *	PB84-174804	p 7	N85-12803 #
NAS 1.26:184509	p 100	N89-14949 *	NASA-TM-87821	p 24	N86-33206 *	PB84-179423	p 80	N84-75267 #
NAS 1.26:184514	p 80	N89-14954 *	NASA-TM-89243	p 110	N86-29568 *	PB84-183219	p 5	N84-31080 #
NAS 1.26:184517	p 42	N89-14957 *	NASA-TM-89397	p 51	N84-29481 #	PB84-189158	p 109	N84-32302 #
NAS 1.26:184518	p 43	N89-14958 *	NAVTRAEQUIP-IH-158	p 73	N87-23312 #	PB84-189636	p 108	N84-30737 #
NAS 1.26:184521	p 100	N89-14961 *	NBS-SP-726	p 22	N85-26173 #	PB84-195381	p 68	N85-33295 #
NAS 1.26:184523	p 55	N89-14963 *	NBS/SP-500/119	p 22	N85-27762 #	PB84-195874	p 6	N84-33296 #
NAS 1.26:184524	p 55	N89-14964 *	NBS/SP-500/120	p 109	N85-24793 #	PB84-214501	p 21	N85-12777 #
NAS 1.26:184526	p 87	N89-14966 *	NBS/SP-500/133	p 110	N86-25140 #	PB84-214519	p 21	N85-12778 #
NAS 1.26:184529	p 43	N89-14969 *	NBS/SP-500/154	p 27	N89-11621 #	PB84-217033	p 7	N85-18517 #
NAS 1.26:184533	p 15	N89-14973 #	NBS/SP-737	p 26	N86-21448 #	PB84-222736	p 69	N85-12794 #
NAS 1.26:184537	p 15	N89-14977 #	NBSIR-84-2836	p 7	N85-18517 #	PB84-226841	p 17	N86-71594 #
NAS 1.26:184538	p 15	N89-14978 #	NBSIR-85-2999	p 84	N85-29854 #	PB84-229244	p 6	N85-12796 #
NAS 1.26:184615	p 87	N89-14946 *	NBSIR-85/3164	p 9	N86-18004 #	PB84-230523	p 83	N85-12798 #
NAS 1.26:184615	p 87	N89-14946 *	NBSIR-85/3173	p 9	N86-18923 #	PB84-232122	p 111	N85-70325 #
NAS 1.26:184674	p 61	N89-20717 *	NBSIR-88/3768	p 14	N89-11412 #	PB84-235795	p 7	N85-13673 #
NAS 1.26:185409	p 88	N89-25773 *	NHB-2410 1D	p 17	N85-72768 #	PB85-127157	p 93	N85-22260 #
NAS 1.26:185460	p 31	N89-25619 #	NIPER-334	p 78	N89-16018 #	PB85-161040	p 109	N85-24793 #
NAS 1.26:185729	p 90	N89-71336 *	NLM-TSD-84-01	p 8	N84-33296 #	PB85-162501	p 8	N85-27127 #
NAS 1.26:185730	p 32	N89-71335 *	NLM-82/302/4	p 93	N85-12798 #	PB85-165850	p 22	N85-26173 #
NAS 1.26:4029	p 24	N87-16381 *	NORDA-101	p 71	N86-24226 #	PB85-175644	p 17	N85-74028 #
NAS 1.55:2302	p 67	N84-22402 *	NOSOC/TD-1216	p 88	N89-22524 #	PB85-178097	p 8	N85-31848 #
NAS 1.55:2302	p 67	N84-22402 *	NOSOC/TD-1328	p 77	N89-21559 #	PB85-178113	p 8	N85-32038 #
NAS 1.55:2304	p 81	N84-21403 *	NOSOC/TD-1482	p 57	N89-26779 #	PB85-177640	p 84	N85-29854 #
NAS 1.55:2323	p 82	N84-33266 *	NPRDC-TN-77-10	p 57	N86-70447 #	PB85-193068	p 94	N85-15828 #
NAS 1.55:2323-PT-2	p 69	N84-34376 *	NPRDC-TN-88-2	p 54	N88-18189 #	PB85-224491	p 9	N86-18004 #
NAS 1.55:3025	p 78	N89-22332 *	NPRDC-TR-85-17	p 84	N86-18153 #	PB85-225217	p 9	N86-18923 #
NAS 1.55:3033	p 45	N89-26578 #	NPRDC-TR-88-8	p 71	N86-24215 #	PB85-240521	p 71	N86-19263 #
NASA-CP-2302	p 67	N84-22402 *	NPS-012-84-004PR	p 83	N85-27739 #	PB85-245860	p 10	N86-19980 #
NASA-CP-2304	p 81	N84-21403 *	NPS-54-86-006	p 11	N87-13353 #	PB86-129954	p 110	N86-25140 #
NASA-CP-2323	p 82	N84-33266 *	NPS0142-83-001	p 80	N85-70580 #	PB86-153764	p 23	N86-25697 #
NASA-CP-2343-PT-2	p 69	N84-34376 *	NPS52-84-005	p 21	N84-27453 #	PB86-174315	p 104	N86-72104 #
NASA-CP-3025	p 78	N89-22332 *	NPS52-84-014	p 22	N85-16481 #	PB86-205341	p 73	N87-12404 #
NASA-CP-3033	p 45	N89-26578 #	NPS52-84-018	p 7	N85-17742 #	PB86-240215	p 110	N87-12397 #
NASA-CR-173320	p 3	N84-18304 *	NPS52-85-008	p 8	N85-32825 #	PB86-247682	p 17	N87-70232 #
NASA-CR-173562	p 108	N84-26318 *	NPS52-86-017	p 53	N87-13840 #	PB87-110490	p 10	N86-25209 #
NASA-CR-173564	p 108	N84-26317 *	NPS52-89-020	p 103	N89-26780 #	PB87-114138	p 73	N87-16845 #
NASA-CR-173836	p 5	N84-32282 *	NPS74-85-002	p 52	N86-25123 #	PB87-118220	p 12	N87-25876 #
NASA-CR-173908	p 68	N84-33295 *	NRL-MR-6351	p 29	N89-16389 #	PB87-126256	p 114	N87-21754 #
NASA-CR-174080	p 111	N85-70325 *	NSF/INT-81/002	p 80	N84-75267 #	PB87-155495	p 12	N87-21737 #
NASA-CR-175489	p 109	N85-28593 *				PB87-157689	p 38	N87-24238 #
NASA-CR-176643	p 71	N86-22130 *				PB87-185997	p 12	N87-28458 #
NASA-CR-177838	p 23	N86-20473 *				PB88-101027	p 13	N88-16577 #
NASA-CR-178384	p 76	N89-14472 *						
NASA-CR-178385	p 78	N89-22133 *						
NASA-CR-178386	p 76	N89-15435 *						
NASA-CR-178387	p 76	N89-16195 *						
NASA-CR-178393	p 75	N89-12581 *						
NASA-CR-179395	p 87	N89-14933 *						
NASA-CR-179769	p 72	N86-32863 *						
NASA-CR-181481	p 12	N88-12412 *						
NASA-CR-181517	p 39	N88-12421 *						
NASA-CR-181732	p 80	N89-14473 *						
NASA-CR-181784	p 16	N89-20619 *						
NASA-CR-181825	p 30	N86-24058 *						
NASA-CR-182380	p 13	N88-16577 *						
NASA-CR-183249	p 89	N89-28440 *						
NASA-CR-183438	p 69	N89-71278 *						
NASA-CR-183455	p 89	N89-71121 *						
NASA-CR-184508	p 87	N89-14948 *						
NASA-CR-184509	p 100	N89-14949 *						

P888-143185	p 111	N86-20210	#	T185-901186	p 22	N85-27762	#
P888-168804	p 26	N88-21448	#	UCB/CSD-87/367	p 78	N89-13305	#
P888-183086	p 111	N88-25183	#	UCID-20526	p 95	N86-18260	#
P888-200787	p 100	N89-11620	#	UCID-20529	p 95	N86-18245	#
P888-201561	p 27	N89-11621	#	UCLA-SDPS-78-002	p 111	N84-73042	#
P888-215645	p 14	N89-11412	#	UCRL-101237	p 80	N89-28447	#
P888-224852	p 44	N89-16400	#	UCRL-53439	p 20	N84-14067	#
P888-120778	p 62	N89-70498	#	UCRL-89740	p 92	N84-25369	#
P888-127526	p 78	N89-22188	#	UCRL-89995-REV-1	p 93	N85-20638	#
P888-151252	p 89	N89-27261	#	UCRL-90276	p 68	N84-33099	#
P888-174155	p 32	N89-71248	#	UCRL-90941-REV-1	p 22	N85-27572	#
P888-177802	p 89	N89-27590	#	UCRL-95133	p 110	N87-24232	#
P888-188841	p 104	N89-27196	#	UCRL-95277	p 25	N87-19981	#
PMS-P-2100.1-CHGE-1	p 111	N85-72106	#	UCRL-96378	p 74	N88-11564	#
PMS-P-2100.1	p 111	N85-72650	#	UCRL-96911	p 99	N88-13082	#
PNL-SA-12978	p 114	N86-17230	#	UCRL-97617	p 100	N89-14943	#
PNL-5190	p 83	N85-13675	#	UCRL-98873	p 30	N89-23195	#
PNL-5527	p 95	N86-16155	#	ULT-2002	p 4	N84-24244	#
PNL-6279-VOL-9	p 78	N89-22295	#	USAESC-R-88-2	p 13	N88-23680	#
R-028-85	p 58	N86-25992	#	UVA-527387/CS89/101	p 88	N89-26413	#
R-3355-NSF	p 23	N86-25687	#	WCP-99	p 72	N86-32938	#
RADC-TR-83-312	p 4	N84-23402	#	WMO/TD-48	p 72	N86-32938	#
RADC-TR-88-213	p 30	N89-24069	#	WMSI-WP-362	p 30	N89-22369	#
RADC-TR-88-23	p 26	N86-26863	#	Y/DL-914	p 8	N85-28633	#
RADC-TR-88-48	p 32	N89-28332	#				
RAND-R-2867-ARPA	p 80	N84-74361	#				
RAND/N-2115	p 6	N84-33284	#				
RAND/P-6830	p 107	N84-21402	#				
RCC/DG-501-84	p 5	N84-25742	#				
REPT-2	p 81	N84-21403	#				
REPT-87-B-0266	p 53	N87-24098	#				
REPT-88-2	p 56	N89-20695	#				
REPT-89B00099	p 45	N89-26578	#				
REPT-89B00037	p 101	N89-15829	#				
REPT-89B00038	p 78	N89-22332	#				
RIACS-TR-86-6	p 110	N86-29568	#				
RIACS-TR-88-22	p 88	N89-25773	#				
S-REPT-88-479	p 4	N84-24504	#				
SA-SSP-RP008-VOL-2-BK-3	p 3	N84-18304	#				
SAE PAPER 841491	p 47	A86-26011	*				
SAE PAPER 881053	p 65	A89-27851	*				
SAND-84-0231	p 82	N84-34202	#				
SAND-85-0309C	p 70	N86-17222	#				
SAND-85-0925C	p 9	N85-33736	#				
SAND-86-0499C	p 24	N86-33208	#				
SAND-86-1284C	p 97	N86-33207	#				
SAND-86-2453	p 110	N87-23152	#				
SAND-86-2543C	p 110	N87-23151	#				
SAND-87-0215C	p 74	N87-28460	#				
SAND-87-2379	p 75	N88-29247	#				
SAND-88-0272	p 61	N89-15330	#				
SAND-88-2088C	p 42	N89-14709	#				
SAND-88-3439	p 69	N89-27597	#				
SAND-89-0156	p 79	N89-23199	#				
SAND-89-0838C	p 79	N89-27593	#				
SEL-81-104	p 89	N89-71121	*				
SPIE-937	p 34	A89-33677	*				
SRI-ESU-2918	p 26	N88-26988	#				
SU-SLAC-PUB-4474	p 75	N89-11615	#				
SU-STAN-CS-83-995	p 36	N84-25370	#				
SU-TR-7	p 36	N84-25370	#				
SYTEK-TR-84009	p 111	N85-74089	#				
T186-90C895	p 96	N86-28792	#				
TR-DG-19-ONR	p 10	N86-33200	#				
TR-DG-23-ONR	p 10	N86-33201	#				
TR-214	p 39	N88-20899	#				
TR-694	p 97	N86-33203	#				
TR-85-3-ONR	p 52	N86-18985	#				
TR-87-03-06	p 32	N89-70704	#				
TR-87-033	p 54	N88-18298	#				

Typical Accession Number Index Listing



Listings in this index are arranged alphanumerically by accession number. The page number listed to the right indicates the page on which the citation is located. An asterisk (*) indicates that the item is a NASA report. A pound sign (#) indicates that the item is available on microfiche.

A84-19222 p 46
A84-21644 p 57
A84-22341 * # p 112
A84-32429 p 46
A84-33463 p 57
A84-41197 * p 18
A84-44092 p 90
A84-44325 * p 18
A84-44671 p 46
A84-44751 p 46
A84-45547 * p 90
A84-45571 * p 90
A85-14170 p 62
A85-14469 p 18
A85-17865 * # p 46
A85-18437 # p 32
A85-24514 * p 90
A85-24549 * p 90
A85-26824 p 62
A85-29025 p 112
A85-31792 p 57
A85-41058 # p 62
A85-42593 p 104
A85-42594 * # p 104
A85-42595 p 104
A85-42596 p 105
A85-42597 p 105
A85-42598 p 105
A85-42600 * p 105
A85-43401 p 47
A85-44992 p 62
A85-49972 p 112
A86-20668 * p 18
A86-20669 * # p 63
A86-21876 p 1
A86-21889 p 47
A86-23740 p 47
A86-26011 * p 47
A86-33776 p 47
A86-34121 # p 112
A86-34194 p 1
A86-34986 * p 32
A86-40659 * p 90
A86-43349 p 112
A87-11807 # p 1
A87-12216 * # p 47
A87-13162 p 63
A87-13182 p 63
A87-13537 # p 63
A87-16003 # p 1
A87-16697 p 32
A87-16706 p 32
A87-16716 * p 48
A87-18818 * p 48
A87-18852 p 105

A87-18853 # p 105
A87-18854 # p 105
A87-18855 # p 106
A87-18856 # p 106
A87-18857 # p 106
A87-18858 # p 106
A87-18859 # p 112
A87-18860 # p 106
A87-18861 * # p 106
A87-18863 # p 106
A87-18864 # p 107
A87-18865 # p 107
A87-28445 * p 48
A87-31113 # p 1
A87-33020 p 48
A87-33044 p 48
A87-33502 p 48
A87-33532 p 49
A87-34522 p 91
A87-34597 p 113
A87-48577 * # p 63
A87-48582 * # p 49
A87-48590 # p 2
A87-48600 * # p 64
A87-48606 * # p 18
A87-48607 * # p 18
A87-49213 p 64
A87-53087 p 2
A87-53207 * p 64
A87-53230 * p 64
A88-10402 p 2
A88-15851 * # p 64
A88-15906 * # p 64
A88-16167 # p 49
A88-18630 # p 18
A88-19830 p 113
A88-19831 p 113
A88-20252 * p 19
A88-22566 # p 107
A88-26209 p 107
A88-26210 * # p 107
A88-26212 * # p 107
A88-26213 * # p 107
A88-35376 p 49
A88-35401 p 49
A88-35404 p 49
A88-35418 p 49
A88-35463 p 58
A88-38690 * p 64
A88-46509 p 58
A88-46511 * p 50
A88-51934 # p 19
A88-52359 p 2
A88-54484 p 33
A88-55015 p 19

A88-55330 * # p 80
A89-10945 # p 65
A89-10968 # p 65
A89-11718 * p 33
A89-11809 p 65
A89-12104 * # p 2
A89-12107 # p 2
A89-12126 # p 113
A89-12176 p 19
A89-12177 p 19
A89-12179 p 50
A89-12180 * p 15
A89-12181 p 19
A89-12182 p 33
A89-12863 p 65
A89-17630 * # p 2
A89-17871 # p 113
A89-17996 p 33
A89-18148 # p 3
A89-18865 p 50
A89-20833 p 33
A89-21801 * p 33
A89-21803 * p 33
A89-21808 p 80
A89-21810 * p 34
A89-21812 * p 91
A89-25185 # p 34
A89-25618 # p 91
A89-25619 # p 91
A89-25620 # p 91
A89-26248 p 19
A89-26960 p 34
A89-27177 p 58
A89-27210 * p 3
A89-27235 p 91
A89-27239 p 81
A89-27851 p 65
A89-28460 # p 65
A89-29067 * p 50
A89-31939 p 65
A89-31941 * p 66
A89-33030 p 113
A89-33677 p 34
A89-33679 * p 34
A89-33685 p 34
A89-39600 p 20
A89-41152 p 66
A89-41157 p 66
A89-41158 * p 35
A89-41654 p 3
A89-45136 * p 35
A89-45294 # p 50
A89-45650 * p 92
A89-48162 # p 20
A89-48764 p 20
A89-49447 # p 66
A89-49456 # p 50
N84-11059 # p 92
N84-11061 # p 92
N84-11756 # p 35
N84-11819 # p 35
N84-11821 # p 35
N84-11823 # p 35
N84-11824 # p 36
N84-11989 # p 3
N84-14067 # p 20
N84-14795 # p 50
N84-14984 # p 81
N84-15790 # p 50
N84-15836 # p 92
N84-16078 # p 63
N84-17929 # p 36
N84-18112 # p 66
N84-18113 # p 51
N84-18304 * # p 3
N84-19163 # p 20
N84-19169 # p 3
N84-19174 # p 66
N84-20187 # p 51
N84-20270 # p 36
N84-20425 # p 81
N84-20426 # p 81

N84-20840 # p 20
N84-21104 # p 81
N84-21402 # p 107
N84-21403 * # p 81
N84-21405 * # p 82
N84-21406 * # p 82
N84-21408 * # p 3
N84-21411 * # p 82
N84-21412 * # p 67
N84-21415 * # p 82
N84-21426 # p 20
N84-21429 # p 4
N84-22211 * # p 67
N84-22254 # p 51
N84-22316 * # p 4
N84-22402 * # p 67
N84-22844 # p 51
N84-23295 # p 67
N84-23297 # p 4
N84-23298 # p 67
N84-23402 # p 4
N84-23406 p 92
N84-24244 # p 4
N84-24501 # p 67
N84-24504 # p 4
N84-25369 # p 92
N84-25370 # p 36
N84-25528 # p 4
N84-25742 # p 5
N84-26317 * # p 108
N84-26318 * # p 108
N84-26468 # p 67
N84-27453 # p 21
N84-27802 # p 21
N84-28451 # p 68
N84-28452 # p 51
N84-28498 # p 108
N84-28670 # p 36
N84-29437 # p 5
N84-29481 # p 51
N84-29798 # p 82
N84-29802 # p 82
N84-30736 # p 108
N84-30737 * # p 108
N84-31050 # p 36
N84-31060 # p 5
N84-31741 * # p 68
N84-31989 # p 108
N84-32275 # p 51
N84-32277 # p 93
N84-32282 * # p 5
N84-32302 # p 109
N84-33060 # p 68
N84-33063 # p 21
N84-33099 # p 68
N84-33266 * # p 82
N84-33267 * # p 5
N84-33268 * # p 5
N84-33269 * # p 82
N84-33270 * # p 82
N84-33271 * # p 6
N84-33273 * # p 6
N84-33279 * # p 68
N84-33283 # p 93
N84-33284 # p 6
N84-33288 # p 6
N84-33290 # p 58
N84-33295 * # p 68
N84-33296 # p 6
N84-34188 # p 6
N84-34202 # p 82
N84-34316 # p 21
N84-34319 # p 69
N84-34326 # p 21
N84-34327 # p 6
N84-34376 * # p 69
N84-34377 * # p 69
N84-34381 * # p 21
N84-71658 # p 57
N84-73042 # p 111
N84-74126 # p 104
N84-74361 # p 80
N84-75065 # p 104

N84-75267 # p 80
N85-10859 # p 6
N85-11013 * # p 113
N85-11618 # p 37
N85-11626 # p 37
N85-11628 # p 37
N85-11906 # p 83
N85-12434 # p 69
N85-12615 # p 37
N85-12777 # p 21
N85-12778 # p 21
N85-12780 # p 93
N85-12784 # p 37
N85-12790 # p 83
N85-12791 # p 69
N85-12794 # p 69
N85-12796 # p 6
N85-12798 # p 93
N85-12803 # p 7
N85-13673 # p 7
N85-13674 # p 7
N85-13675 # p 83
N85-13677 # p 69
N85-15434 # p 7
N85-16481 # p 22
N85-16517 # p 7
N85-17742 # p 7
N85-19647 # p 52
N85-19649 # p 52
N85-19691 # p 109
N85-20938 # p 93
N85-21994 # p 109
N85-22260 # p 93
N85-23449 # p 7
N85-23451 # p 83
N85-24198 * # p 22
N85-24788 # p 69
N85-24793 # p 109
N85-25003 # p 37
N85-26170 # p 22
N85-26173 # p 22
N85-26439 * # p 83
N85-27106 * # p 22
N85-27121 # p 7
N85-27127 # p 8
N85-27572 # p 22
N85-27739 # p 83
N85-27747 # p 94
N85-27749 # p 94
N85-27750 # p 94
N85-27752 # p 84
N85-27762 # p 22
N85-28593 * # p 109
N85-28633 # p 8
N85-28879 # p 8
N85-28942 # p 69
N85-29849 # p 84
N85-29854 # p 84
N85-30760 # p 8
N85-30967 # p 84
N85-30972 # p 70
N85-30973 # p 70
N85-31848 # p 8
N85-32038 # p 8
N85-32825 # p 8
N85-33042 # p 9
N85-33736 # p 9
N85-34545 # p 70
N85-35459 # p 70
N85-35C18 # p 9
N85-35823 # p 9
N85-35828 # p 94
N85-70325 * # p 11
N85-70560 # p 80
N85-70762 # p 17
N85-72106 # p 111
N85-72650 # p 111
N85-72768 * # p 17
N85-74028 # p 17
N85-74089 # p 111
N85-74267 # p 111
N85-74342 # p 111
N86-10586 # p 114

N86-11078 # p 94	N87-13840 # p 53	N88-30449 # p 40	N89-16303 * # p 101	N89-27350 # p 17
N86-12995 # p 94	N87-15025 # p 38	N88-30452 # p 26	N89-16341 * # p 29	N89-27590 # p 89
N86-13227 # p 84	N87-15902 # p 11	N88-30454 # p 40	N89-16366 * # p 78	N89-27597 # p 79
N86-15171 * # p 84	N87-16381 * # p 24	N88-30455 # p 41	N89-16368 * # p 43	N89-28121 * # p 79
N86-15174 * # p 9	N87-16650 # p 98	N88-30457 # p 14	N89-16371 * # p 77	N89-28308 # p 31
N86-15175 * # p 58	N87-16657 # p 53	N88-30462 # p 106	N89-16375 * # p 77	N89-28330 # p 31
N86-15208 # p 109	N87-16658 # p 25	N88-70731 # p 104	N89-16389 # p 29	N89-28332 # p 32
N86-15209 * # p 23	N87-18282 # p 25	N88-70733 # p 112	N89-16400 # p 44	N89-28440 # p 89
N86-15211 # p 95	N87-18485 # p 73	N88-70735 # p 80	N89-16407 # p 87	N89-28442 # p 89
N86-15213 # p 38	N87-18528 # p 38	N88-70736 # p 80	N89-16486 # p 77	N89-28447 # p 80
N86-15919 # p 109	N87-19845 # p 73	N89-10070 * # p 86	N89-16609 * # p 115	N89-28447 # p 80
N86-16153 # p 84	N87-19913 # p 59	N89-10071 * # p 86	N89-17545 # p 15	N89-28447 # p 80
N86-16155 # p 95	N87-19923 # p 58	N89-10078 * # p 86	N89-19068 # p 16	N89-28447 # p 80
N86-16159 # p 23	N87-19981 # p 25	N89-10096 * # p 41	N89-19322 * # p 15	N89-28447 # p 80
N86-16917 # p 70	N87-20128 # p 59	N89-10500 # p 75	N89-19841 * # p 44	N89-28447 # p 80
N86-16923 # p 9	N87-20131 # p 11	N89-10668 # p 27	N89-19890 * # p 55	N89-28447 # p 80
N86-17219 # p 95	N87-20772 # p 25	N89-10672 # p 41	N89-19891 * # p 61	N89-28447 # p 80
N86-17222 # p 70	N87-20772 # p 25	N89-10674 # p 27	N89-19903 # p 87	N89-28447 # p 80
N86-17230 # p 114	N87-20833 * # p 35	N89-11403 # p 14	N89-20028 * # p 101	N89-28447 # p 80
N86-18004 # p 9	N87-21737 # p 11	N89-11406 # p 60	N89-20062 * # p 55	N89-28447 # p 80
N86-18245 # p 95	N87-21739 # p 98	N89-11412 # p 14	N89-20285 * # p 44	N89-28447 # p 80
N86-18246 # p 10	N87-21754 # p 114	N89-11435 # p 41	N89-20574 # p 44	N89-28447 # p 80
N86-18985 # p 52	N87-22410 * # p 53	N89-11615 # p 75	N89-20619 * # p 16	N89-28447 # p 80
N86-19002 # p 95	N87-22551 # p 11	N89-11620 # p .00	N89-20645 # p 29	N89-28447 # p 80
N86-19290 # p 85	N87-23018 * # p 73	N89-11621 # p 27	N89-20667 # p 101	N89-28447 # p 80
N86-19263 # p 71	N87-23151 # p 110	N89-11626 # p 14	N89-20684 * # p 44	N89-28447 # p 80
N86-19950 * # p 109	N87-23152 # p 110	N89-11629 # p 14	N89-20685 * # p 56	N89-28447 # p 80
N86-19960 # p 10	N87-23158 * # p 53	N89-11630 # p 14	N89-20686 * # p 56	N89-28447 # p 80
N86-20173 # p 38	N87-23312 # p 73	N89-11631 # p 14	N89-20687 * # p 56	N89-28447 # p 80
N86-20473 * # p 23	N87-24098 * # p 53	N89-11632 # p 15	N89-20704 # p 56	N89-28447 # p 80
N86-21143 # p 52	N87-24116 # p 25	N89-11633 # p 15	N89-20717 * # p 61	N89-28447 # p 80
N86-21431 # p 95	N87-24227 # p 12	N89-12294 # p 41	N89-20859 # p 101	N89-28447 # p 80
N86-21432 # p 96	N87-24232 # p 110	N89-12295 # p 42	N89-20866 # p 101	N89-28447 # p 80
N86-21458 # p 114	N87-24233 # p 85	N89-12486 # p 15	N89-20869 # p 102	N89-28447 # p 80
N86-22130 * # p 71	N87-24238 # p 38	N89-12488 # p 15	N89-21538 * # p 61	N89-28447 # p 80
N86-22134 # p 58	N87-25876 * # p 12	N89-12496 # p 114	N89-21559 # p 77	N89-28447 # p 80
N86-24215 # p 71	N87-2667 * p 98	N89-12554 * # p 75	N89-21576 # p 88	N89-28447 # p 80
N86-24226 # p 71	N87-26680 # p 12	N89-12558 # p 75	N89-21705 # p 61	N89-28447 # p 80
N86-24227 # p 71	N87-27550 # p 111	N89-12581 * # p 75	N89-21706 # p 102	N89-28447 # p 80
N86-24552 # p 85	N87-27551 # p 98	N89-13154 # p 27	N89-21711 # p 16	N89-28447 # p 80
N86-24558 # p 96	N87-28458 # p 12	N89-13174 # p 27	N89-21730 * # p 78	N89-28447 # p 80
N86-24561 # p 85	N87-28460 # p 74	N89-13188 # p 42	N89-22133 * # p 78	N89-28447 # p 80
N86-24562 # p 110	N87-29132 * # p 53	N89-13191 # p 42	N89-22188 # p 78	N89-28447 # p 80
N86-24572 # p 71	N87-29371 # p 12	N89-13305 # p 76	N89-22295 # p 78	N89-28447 # p 80
N86-25123 # p 52	N87-30211 # p 74	N89-13306 # p 115	N89-22327 # p 61	N89-28447 # p 80
N86-25133 # p 23	N87-70232 # p 17	N89-13901 # p 28	N89-22332 * # p 78	N89-28447 # p 80
N86-25140 # p 110	N88-10695 # p 114	N89-13911 # p 28	N89-22334 * # p 102	N89-28447 # p 80
N86-25299 # p 10	N88-11564 # p 74	N89-13912 # p 28	N89-22354 # p 16	N89-28447 # p 80
N86-25681 # p 96	N88-11571 # p 12	N89-13913 # p 86	N89-22356 # p 88	N89-28447 # p 80
N86-25687 # p 23	N88-11925 * # p 25	N89-13915 # p 42	N89-22369 # p 30	N89-28447 # p 80
N86-25992 # p 58	N88-12066 # p 74	N89-13918 # p 60	N89-22374 # p 78	N89-28447 # p 80
N86-25999 # p 85	N88-12412 * # p 12	N89-13919 # p 60	N89-22524 # p 88	N89-28447 # p 80
N86-26000 # p 72	N88-12415 # p 12	N89-13920 # p 28	N89-22525 # p 102	N89-28447 # p 80
N86-26026 # p 96	N88-12417 # p 13	N89-13921 # p 28	N89-22527 # p 16	N89-28447 # p 80
N86-26245 # p 72	N88-12420 # p 98	N89-13954 # p 86	N89-22528 # p 16	N89-28447 # p 80
N86-26924 # p 24	N88-12421 * # p 39	N89-13995 * # p 60	N89-22532 # p 62	N89-28447 # p 80
N86-27108 * # p 85	N88-13062 # p 99	N89-14068 # p 28	N89-23132 # p 45	N89-28447 # p 80
N86-27110 # p 10	N88-13085 # p 74	N89-14176 # p 28	N89-23195 # p 30	N89-28447 # p 80
N86-27130 # p 114	N88-15725 # p 39	N89-14177 # p 86	N89-23199 # p 56	N89-28447 # p 80
N86-28779 # p 96	N88-15729 # p 26	N89-14472 * # p 76	N89-23370 # p 102	N89-28447 # p 80
N86-28792 # p 96	N88-16392 * # p 39	N89-14473 * # p 60	N89-23371 # p 17	N89-28447 # p 80
N86-28797 # p 97	N88-16423 * # p 39	N89-14700 # p 28	N89-23374 # p 103	N89-28447 # p 80
N86-28798 # p 59	N88-16424 * # p 39	N89-14702 # p 100	N89-23377 # p 103	N89-28447 # p 80
N86-28799 # p 97	N88-16574 # p 99	N89-14709 # p 42	N89-23380 # p 103	N89-28447 # p 80
N86-29285 * # p 24	N88-16577 * # p 13	N89-14768 # p 42	N89-23381 # p 103	N89-28447 # p 80
N86-29295 * # p 72	N88-17207 * # p 85	N89-14933 * # p 87	N89-24058 * # p 30	N89-28447 # p 80
N86-29296 * # p 72	N88-17337 # p 39	N89-14943 # p 100	N89-24066 # p 79	N89-28447 # p 80
N86-29297 * # p 24	N88-18189 # p 54	N89-14946 * # p 87	N89-24068 # p 30	N89-28447 # p 80
N86-29298 * # p 24	N88-18298 # p 54	N89-14948 * # p 87	N89-24069 # p 30	N89-28447 # p 80
N86-29568 * # p 110	N88-18505 # p 74	N89-14949 * # p 100	N89-24070 # p 45	N89-28447 # p 80
N86-29722 # p 59	N88-18510 # p 13	N89-14954 * # p 60	N89-24226 # p 45	N89-28447 # p 80
N86-30378 * # p 10	N88-20052 # p 39	N89-14957 * # p 42	N89-24847 # p 45	N89-28447 # p 80
N86-30570 # p 97	N88-20210 # p 111	N89-14958 * # p 43	N89-25162 * # p 79	N89-28447 # p 80
N86-30573 # p 38	N88-20820 # p 59	N89-14961 * # p 100	N89-25219 * # p 30	N89-28447 # p 80
N86-31448 # p 97	N88-20825 # p 54	N89-14963 * # p 55	N89-25619 * # p 31	N89-28447 # p 80
N86-32863 * # p 72	N88-20899 # p 39	N89-14964 * # p 55	N89-25771 # p 103	N89-28447 # p 80
N86-32938 # p 72	N88-21448 # p 26	N89-14966 * # p 87	N89-25774 # p 45	N89-28447 # p 80
N86-32983 * # p 52	N88-21697 * # p 26	N89-14969 * # p 43	N89-26413 # p 88	N89-28447 # p 80
N86-32985 * # p 53	N88-22542 * # p 111	N89-14973 * # p 15	N89-26470 * # p 57	N89-28447 # p 80
N86-33200 # p 10	N88-22822 # p 99	N89-14977 * # p 15	N89-26578 * # p 45	N89-28447 # p 80
N86-33201 # p 10	N88-22823 # p 99	N89-14978 * # p 15	N89-26580 * # p 57	N89-28447 # p 80
N86-33203 # p 97	N88-23680 # p 13	N89-15330 # p 61	N89-26599 * # p 45	N89-28447 # p 80
N86-33204 # p 10	N88-23686 # p 99	N89-15435 * # p 76	N89-26600 * # p 46	N89-28447 # p 80
N86-33206 # p 11	N88-24838 # p 26	N89-15559 * # p 43	N89-26601 * # p 79	N89-28447 # p 80
N86-33207 # p 97	N88-25163 # p 111	N89-15574 * # p 43	N89-26602 * # p 88	N89-28447 # p 80
N86-33268 * # p 24	N88-25374 # p 86	N89-15585 * # p 43	N89-26776 # p 31	N89-28447 # p 80
N86-70447 # p 57	N88-26114 # p 54	N89-15597 * # p 29	N89-26777 # p 31	N89-28447 # p 80
N86-71594 # p 17	N88-26805 # p 54	N89-15607 * # p 43	N89-26779 # p 57	N89-28447 # p 80
N86-72104 # p 104	N88-26837 # p 54	N89-15773 # p 29	N89-26780 # p 103	N89-28447 # p 80
N87-11492 # p 72	N88-26863 # p 26	N89-15774 # p 61	N89-27196 # p 104	N89-28447 # p 80
N87-11493 # p 72	N88-27971 # p 99	N89-15787 # p 87	N89-27261 # p 89	N89-28447 # p 80
N87-11630 # p 98	N88-28644 # p 55	N89-15829 # p 101		
N87-12388 # p 73	N88-29247 # p 75	N89-16018 # p 76		
N87-12397 # p 110	N88-30333 * # p 55	N89-16195 * # p 76		
N87-12404 # p 73	N88-30352 * # p 40	N89-16295 * # p 29		
N87-13353 # p 11	N88-30354 * # p 13	N89-16301 * # p 101		

AVAILABILITY OF CITED PUBLICATIONS

IAA ENTRIES (A89-10000 Series)

Publications announced in *IAA* are available from the AIAA Technical Information Service as follows: Paper copies of accessions are available at \$10.00 per document (up to 50 pages), additional pages \$0.25 each. Microfiche⁽¹⁾ of documents announced in *IAA* are available at the rate of \$4.00 per microfiche on demand. Standing order microfiche are available at the rate of \$1.45 per microfiche for *IAA* source documents and \$1.75 per microfiche for AIAA meeting papers.

Minimum air-mail postage to foreign countries is \$2.50. All foreign orders are shipped on payment of pro-forma invoices.

All inquiries and requests should be addressed to: Technical Information Service, American Institute of Aeronautics and Astronautics, 555 West 57th Street, New York, NY 10019. Please refer to the accession number when requesting publications.

STAR ENTRIES (N89-10000 Series)

One or more sources from which a document announced in *STAR* is available to the public is ordinarily given on the last line of the citation. The most commonly indicated sources and their acronyms or abbreviations are listed below. If the publication is available from a source other than those listed, the publisher and his address will be displayed on the availability line or in combination with the corporate source line.

Avail: NTIS. Sold by the National Technical Information Service. Prices for hard copy (HC) and microfiche (MF) are indicated by a price code preceded by the letters HC or MF in the *STAR* citation. Current values for the price codes are given in the tables on NTIS PRICE SCHEDULES.

Documents on microfiche are designated by a pound sign (#) following the accession number. The pound sign is used without regard to the source or quality of the microfiche.

Initially distributed microfiche under the NTIS SRIM (Selected Research in Microfiche) is available at greatly reduced unit prices. For this service and for information concerning subscription to NASA printed reports, consult the NTIS Subscription Section, Springfield, VA 22161.

NOTE ON ORDERING DOCUMENTS: When ordering NASA publications (those followed by the * symbol), use the N accession number. NASA patent applications (only the specifications are offered) should be ordered by the US-Patent-Appl-SN number. Non-NASA publications (no asterisk) should be ordered by the AD, PB, or other *report number* shown on the last line of the citation, not by the N accession number. It is also advisable to cite the title and other bibliographic identification.

Avail: SOD (or GPO). Sold by the Superintendent of Documents, U.S. Government Printing Office, in hard copy. The current price and order number are given following the availability line. (NTIS will fill microfiche requests, as indicated above, for those documents identified by a # symbol.)

(1) A microfiche is a transparent sheet of film, 105 by 148 mm in size containing as many as 60 to 98 pages of information reduced to micro images (not to exceed 26:1 reduction)

- Avail: BLL (formerly NLL): British Library Lending Division, Boston Spa, Wetherby, Yorkshire, England. Photocopies available from this organization at the price shown. (If none is given, inquiry should be addressed to the BLL.)
- Avail: DOE Depository Libraries. Organizations in U.S. cities and abroad that maintain collections of Department of Energy reports, usually in microfiche form, are listed in *Energy Research Abstracts*. Services available from the DOE and its depositories are described in a booklet, *DOE Technical Information Center - Its Functions and Services* (TID-4660), which may be obtained without charge from the DOE Technical Information Center.
- Avail: ESDU. Pricing information on specific data, computer programs, and details on Engineering Sciences Data Unit (ESDU) topic categories can be obtained from ESDU International Ltd. Requesters in North America should use the Virginia address while all other requesters should use the London address, both of which are on the page titled ADDRESSES OF ORGANIZATIONS.
- Avail: Fachinformationszentrum, Karlsruhe. Sold by the Fachinformationszentrum Energie, Physik, Mathematik GMBH, Eggenstein Leopoldshafen, Federal Republic of Germany, at the price shown in deutschmarks (DM).
- Avail: HMSO. Publications of Her Majesty's Stationery Office are sold in the U.S. by Pendragon House, Inc. (PHI), Redwood City, CA. The U.S. price (including a service and mailing charge) is given, or a conversion table may be obtained from PHI.
- Avail: NASA Public Document Rooms. Documents so indicated may be examined at or purchased from the National Aeronautics and Space Administration, Public Documents Room (Room 126), 600 Independence Ave., S.W., Washington, DC 20546, or public document rooms located at each of the NASA research centers, the NASA Space Technology Laboratories, and the NASA Pasadena Office at the Jet Propulsion Laboratory.
- Avail: Univ. Microfilms. Documents so indicated are dissertations selected from *Dissertation Abstracts* and are sold by University Microfilms as xerographic copy (HC) and microfilm. All requests should cite the author and the Order Number as they appear in the citation.
- Avail: US Patent and Trademark Office. Sold by Commissioner of Patents and Trademarks, U.S. Patent and Trademark Office, at the standard price of \$1.50 each, postage free.
- Avail: (US Sales Only). These foreign documents are available to users within the United States from the National Technical Information Service (NTIS). They are available to users outside the United States through the International Nuclear Information Service (INIS) representative in their country, or by applying directly to the issuing organization.
- Avail: USGS. Originals of many reports from the U.S. Geological Survey, which may contain color illustrations, or otherwise may not have the quality of illustrations preserved in the microfiche or facsimile reproduction, may be examined by the public at the libraries of the USGS field offices whose addresses are listed in this Introduction. The libraries may be queried concerning the availability of specific documents and the possible utilization of local copying services, such as color reproduction.
- Avail: Issuing Activity, or Corporate Author, or no indication of availability. Inquiries as to the availability of these documents should be addressed to the organization shown in the citation as the corporate author of the document.

PUBLIC COLLECTIONS OF NASA DOCUMENTS

DOMESTIC: NASA and NASA-sponsored documents and a large number of aerospace publications are available to the public for reference purposes at the library maintained by the American Institute of Aeronautics and Astronautics, Technical Information Service, 555 West 57th Street, 12th Floor, New York, New York 10019.

EUROPEAN: An extensive collection of NASA and NASA-sponsored publications is maintained by the British Library Lending Division, Boston Spa, Wetherby, Yorkshire, England for public access. The British Library Lending Division also has available many of the non-NASA publications cited in *STAR*. European requesters may purchase facsimile copy or microfiche of NASA and NASA-sponsored documents, those identified by both the symbols # and * from ESA - Information Retrieval Service European Space Agency, 8-10 rue Mario-Nikis, 75738 CEDEX 15, France.

FEDERAL DEPOSITORY LIBRARY PROGRAM

In order to provide the general public with greater access to U.S. Government publications, Congress established the Federal Depository Library Program under the Government Printing Office (GPO), with 50 regional depositories responsible for permanent retention of material, inter-library loan, and reference services. At least one copy of nearly every NASA and NASA-sponsored publication, either in printed or microfiche format, is received and retained by the 50 regional depositories. A list of the regional GPO libraries, arranged alphabetically by state, appears on the inside back cover. These libraries are *not* sales outlets. A local library can contact a Regional Depository to help locate specific reports, or direct contact may be made by an individual.

ADDRESSES OF ORGANIZATIONS

American Institute of Aeronautics and Astronautics
Technical Information Service
555 West 57th Street, 12th Floor
New York, New York 10019

British Library Lending Division,
Boston Spa, Wetherby, Yorkshire,
England

Commissioner of Patents and Trademarks
U.S. Patent and Trademark Office
Washington, DC 20231

Department of Energy
Technical Information Center
P.O. Box 62
Oak Ridge, Tennessee 37830

European Space Agency-Information Retrieval Service
ESRIN
Via Galileo Galilei
00044 Frascati (Rome) Italy

Engineering Sciences Data Unit International
P.O. Box 1633
Manassas, Virginia 22110

Engineering Sciences Data Unit International, Ltd.
251-259 Regent Street
London, W1R 7AD, England

Fachinformationszentrum Energie, Physik, Mathematik
GMBH
7514 Eggenstein Leopoldshafen
Federal Republic of Germany

Her Majesty's Stationery Office
P.O. Box 569, S.E. 1
London, England

NASA Scientific and Technical Information Facility
P.O. Box 8757
BWI Airport, Maryland 21240

National Aeronautics and Space Administration
Scientific and Technical Information Division (NTT)
Washington, DC 20546

National Technical Information Service
5285 Port Royal Road
Springfield, Virginia 22161

Pendragon House, Inc.
899 Broadway Avenue
Redwood City, California 94063

Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402

University Microfilms
A Xerox Company
300 North Zeeb Road
Ann Arbor, Michigan 48106

University Microfilms, Ltd.
Tylers Green
London, England

U.S. Geological Survey Library National Center
MS 950
12201 Sunrise Valley Drive
Reston, Virginia 22092

U.S. Geological Survey Library
2255 North Gemini Drive
Flagstaff, Arizona 86001

U.S. Geological Survey
345 Middlefield Road
Menlo Park, California 94025

U.S. Geological Survey Library
Box 25046
Denver Federal Center, MS914
Denver, Colorado 80225

NTIS PRICE SCHEDULES

(Effective January 1, 1990)

Schedule A STANDARD PRICE DOCUMENTS AND MICROFICHE

PRICE CODE	NORTH AMERICAN PRICE	FOREIGN PRICE
A01	\$ 8.00	\$ 16.00
A02	11.00	22.00
A03	15.00	30.00
A04-A05	17.00	34.00
A06-A09	23.00	46.00
A10-A13	31.00	62.00
A14-A17	39.00	78.00
A18-A21	45.00	90.00
A22-A25	53.00	106.00
A99	.	.
N01	60.00	120.00
N02	59.00	118.00
N03	20.00	40.00

Schedule E EXCEPTION PRICE DOCUMENTS AND MICROFICHE

PRICE CODE	NORTH AMERICAN PRICE	FOREIGN PRICE
E01	\$10.00	\$ 20.00
E02	12.00	24.00
E03	14.00	28.00
E04	16.50	33.00
E05	18.50	37.00
E06	21.50	43.00
E07	24.00	48.00
E08	27.00	54.00
E09	29.50	59.00
E10	32.50	65.00
E11	35.00	70.00
E12	38.50	77.00
E13	41.00	82.00
E14	45.00	90.00
E15	48.50	97.00
E16	53.00	106.00
E17	57.50	115.00
E18	62.00	124.00
E19	69.00	138.00
E20	80.00	160.00
E99	.	.

* Contact NTIS for price quote.

IMPORTANT NOTICE

NTIS Shipping and Handling Charges

U.S., Canada, Mexico — ADD \$3.00 per TOTAL ORDER

All Other Countries — ADD \$4.00 per TOTAL ORDER

Exceptions — Does NOT apply to:

ORDERS REQUESTING NTIS RUSH HANDLING
ORDERS FOR SUBSCRIPTION OR STANDING ORDER PRODUCTS ONLY

NOTE: Each additional delivery address on an order
requires a separate shipping and handling charge.

1. Report No. NASA SP-7079		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle Information Resources Management 1984-1989 A Bibliography with Indexes				5. Report Date May 1990	
				6. Performing Organization Code NTT	
7. Author(s)				8. Performing Organization Report No.	
9. Performing Organization Name and Address NASA Scientific and Technical Information Division				10. Work Unit No.	
				11. Contract or Grant No.	
12. Sponsoring Agency Name and Address National Aeronautics and Space Administration Washington, DC 20546				13. Type of Report and Period Covered Special Publication	
				14. Sponsoring Agency Code	
15. Supplementary Notes					
16. Abstract This bibliography contains 768 annotated references to reports and journal articles entered into the NASA scientific and technical information database 1984-1989.					
17. Key Words (Suggested by Author(s)) Artificial Intelligence Information Retrieval Communication Networks Information Systems Decision Making Reliability Analysis Information Dissemination User Requirements				18. Distribution Statement Unclassified - Unlimited Subject Category - 82	
19. Security Classif. (of this report) Unclassified		20. Security Classif. (of this page) Unclassified		21. No. of Pages 206	
				22. Price * A10/HC	

FEDERAL REGIONAL DEPOSITORY LIBRARIES

ALABAMA

AUBURN UNIV. AT MONTGOMERY LIBRARY

Documents Department
Montgomery, AL 36193
(205) 279-9110 ext.253

UNIV. OF ALABAMA LIBRARY
Reference Department/Documents
Box S
Tuscaloosa, AL 35486
(205) 348-6046

ARIZONA

OEP.T. OF LIBRARY, ARCHIVES,
AND PUBLIC RECORDS
Third Floor State Capitol
1700 West Washington
Phoenix, AZ 85007
(602) 255-4121

ARKANSAS

ARKANSAS STATE LIBRARY
Documents Service Section
One Capitol Mall
Little Rock, AR 72201
(501) 371-2090

CALIFORNIA

CALIFORNIA STATE LIBRARY
Govt. Publications Section
914 Capitol Mall
Sacramento, CA 95814
(916) 322-4572

COLORADO

UNIV. OF COLORADO
Norlin Library
Government Publications Division
Campus Box 184
Boulder, CO 80309
(303) 492-8834

DENVER PUBLIC LIBRARY

Govt. Pub. Department
1357 Broadway
Denver, CO 80203
(303) 571-2346

CONNECTICUT

CONNECTICUT STATE LIBRARY
231 Capitol Avenue
Hartford, CT 06106
(203) 566-4971

FLORIDA

UNIV. OF FLORIDA LIBRARIES
Documents Department
Library West
Gainesville, FL 32611
(904) 392-0367

GEORGIA

UNIV. OF GEORGIA LIBRARIES
Government Documents Dept
Athens, GA 30602
(404) 542-8949

HAWAII

UNIV. OF HAWAII
Hamilton Library
Government Documents Collection
2550 The Mall
Honolulu HI 96822
(808) 948-8230

IDAHO

UNIV. OF IDAHO LIBRARY
Documents Section
Moscow, ID 83843
(208) 885-6344

ILLINOIS

ILLINOIS STATE LIBRARY
Federal Documents
Centennial Building
Springfield, IL 62756
2-5012

INDIANA

INDIANA STATE LIBRARY
Serials Section
140 North Senate Avenue
Indianapolis, IN 46204
(317) 232-3686

IOWA

UNIV. OF IOWA LIBRARIES
Government Publications Dept
Iowa City, IA 52242
(319) 335-5926

KANSAS

UNIVERSITY OF KANSAS
Spencer Research Library
Government Documents
Lawrence, KS 66045
(913) 864-4662

KENTUCKY

UNIV. OF KENTUCKY LIBRARIES
Government Publications/Maps Dept
Lexington, KY 40506
(606) 257-8400

LOUISIANA

LOUISIANA STATE UNIVERSITY
Middleton Library
Government Documents Dept
Baton Rouge, LA 70803
(504) 388-2570

LOUISIANA TECHNICAL UNIV.

Prescott Memorial Library
Government Documents Dept
Ruston, LA 71272
(318) 257-4962

MAINE

UNIVERSITY OF MAINE
Raymond H. Fogler Library
Govt. Documents & Microforms Dept
Orono, ME 04469
(207) 581-1680

MARYLAND

UNIVERSITY OF MARYLAND
McKeldin Library
Documents/Maps Room
College Park, MD 20742
(301) 454-3034

MASSACHUSETTS

BOSTON PUBLIC LIBRARY
Government Documents Dept
666 Boylston Street
Boston, MA 02117
(617) 536-5400 ext 226

MICHIGAN

OETROIT PUBLIC LIBRARY
5201 Woodward Avenue
Detroit MI 48202
(313) 833-1409

LIBRARY OF MICHIGAN

Government Documents
P.O. Box 30007
735 E. Michigan Avenue
Lansing, MI 48909
(517) 373-1553

MINNESOTA

UNIVERSITY OF MINNESOTA
Wilson Library
Government Publications
309 Nineteenth Avenue South
Minneapolis, MN 55455
(612) 373-7813

MISSISSIPPI

UNIV. OF MISSISSIPPI LIB.
Government Documents Dept
106 Old Gym Bldg
University, MS 38677
(601) 232-5857

MISSOURI

University of Missouri at
Columbia Library
Government Documents
Columbia, MO 65201
(314) 882-6733

MONTANA

UNIV. OF MONTANA
Mansfield Library
Documents Division
Missoula, MT 59812
(406) 243-6709

NEBRASKA

UNIVERSITY OF NEBRASKA -
LINCOLN
Love Memorial Library
Documents Department
Lincoln, NE 68588
(402) 472-2562

NEVADA

UNIV. OF NEVADA-RENO LIB.
Govt. Pub. Department
Reno, NV 89557
(702) 784-6579

NEW JERSEY

NEWARK PUBLIC LIBRARY
U.S. Documents Division
5 Washington Street
PO Box 630
Newark, NJ 07101
(201) 733-7812

NEW MEXICO

UNIVERSITY OF NEW MEXICO
General Library
Government Publications/Maps Dept
Albuquerque, NM 87131
(505) 277-5441

NEW MEXICO STATE LIBRARY

325 Don Gaspar Avenue
Santa Fe, NM 87501
(505) 827-3826

NEW YORK

NEW YORK STATE LIBRARY
Documents Sec. Cultural Educ. Ct.
Empire State Plaza
Albany, NY 12230
(518) 474-5563

NORTH CAROLINA

UNIVERSITY OF NORTH CAROLINA
AT CHAPEL HILL
Davis Library 080A
BA/SS Department Documents
Chapel Hill, NC 27514
(919) 962-1151

NORTH DAKOTA

NORTH DAKOTA STATE
UNIVERSITY LIBRARY
Government Documents Dept
Fargo, ND 58105
(701) 237-8352
In cooperation with Univ. of North
Dakota, Chester Fritz Library
Grand Forks

OHIO

STATE LIBRARY OF OHIO
Documents Section
65 South Front Street
Columbus, OH 43266
(614) 644-7051

OKLAHOMA

OKLAHOMA OEP.T. OF LIBRARIES
Government Documents
200 NE 18th Street
Oklahoma City, OK 73105
(405) 521-2502, ext 252

OKLAHOMA STATE UNIV. LIB.

Documents Department
Stillwater, OK 74078
(405) 624-0489

OREGON

PORTLAND STATE UNIV.
Miller Library
934 SW Harrison - P.O. Box 1151
Port. J. OR 97207
(503) 229-3673

PENNSYLVANIA

STATE LIBRARY OF PENN.
Government Publications Section
Box 1601
Walnut St. & Commonwealth Ave
Harrisburg PA 17105
(717) 787-3752

SOUTH CAROLINA

CLEMSON UNIV. COOPER LIB
Documents Department
Clemson, SC 29634
(803) 656-5174
In cooperation with Univ. of South
Carolina, Thomas Cooper Library
Columbia

TEXAS

TEXAS STATE LIBRARY
Public Services Department
PO Box 12927 - 1201 Brazos
Austin TX 78711
(512) 463-5455

TEXAS TECH. UNIV. LIBRARY

Documents Department
Lubbock TX 79409
(806) 742-2268

UTAH

UTAH STATE UNIVERSITY
Merrill Library & Learning Resources
Center UMC-30
Documents Department
Logan, UT 84322
(801) 750-2682

VIRGINIA

UNIVERSITY OF VIRGINIA
Alderman Library
Government Documents
Charlottesville VA 22903
(804) 924-3133

WASHINGTON

WASHINGTON STATE LIBRARY
Document Section
Olympia, WA 98504
(206) 753-4027

WEST VIRGINIA

WEST VIRGINIA UNIV. LIB
Government Documents Section
PO Box 6069
Morgantown, WV 26506
(304) 293-3640

WISCONSIN

ST. HIST. SOC. OF WISCONSIN LIB
Government Pub. Section
816 State Street
Madison WI 53706
(608) 262-2781
In cooperation with Univ. of Wisconsin
Madison Memorial Library

MILWAUKEE PUBLIC LIBRARY

Documents Division
814 West Wisconsin Avenue
Milwaukee WI 53233
(414) 278-3065

WYOMING

WYOMING STATE LIBRARY
Supreme Court & Library Bldg
Cheyenne, WY 82002
(307) 777-5919